Registered at the G.P.O., Sydney, for Transmission by Post as a Newspaper. Published Weekly.

THE

MEDICAL JOURNAL OF AUSTRALIA

(With which "The Australasian Medical Gazette," and "The Australian Medical Journal" are incorporated.)

The Journal of the Australian Branches of the British Medical Association.

VOL. II.—3RD YEAR—No. 19. SYDNEY: SATURDAY, NOVEMBER 4, 1916. PRICE 6D.

THE MEDICAL JOURNAL OF AUSTRALIA.

VOL. II.—3RD YEAR. SYDNEY: NOVEMBER 4, 1916. No. 19.

THE ADMINISTRATIVE CONTROL OF PULMONARY TUBERCULOSIS IN AUSTRALIA.*

By J. King Patrick, M.D., Ch.B., B.Sc., D.P.H.,
Brisbane.

The problem implied in the phrase, administrative control of pulmonary tuberculosis, is a very large and many-sided one.

It is essential to grasp the fact that the ultimate success of efforts directed against pulmonary tuberculosis must depend largely on the efficacy of preventive measures.

Prevention is proverbially better than cure, and while treatment must necessarily occupy a prominent place in the armamentarium which is brought to bear on the problem, the importance of prophylaxis must never be allowed to be overshadowed by it.

As Dyke Ackland puts it: "Efforts at prevention affect the whole community, and can therefore be applied generally to the whole mass of the population. Efforts at cure, however successful, affect only individuals.

". . . . At the same time, it must be borne in mind that the successful treatment of every case is in itself a step towards prevention, since it diminishes the liability of others to the contagion of the disease."[1]

In these days we are apt to be obsessed by measures directed against the foe as it attacks the individual, and to lose sight of the measures which are undertaken for the sake of the community.

In other words, the sanatorium is apt to bulk too largely in the eyes of those in authority and to the exclusion of sanitation.

Tuberculosis is preventable, and the preventive measures to be adopted to accomplish its eradication must include the whole range of sanitary administrative measures as practised to-day.

We must commence with the affected individual, his surroundings and those in contact with him. We must place under review his house conditions, social conditions, his conditions of work and of relaxation; in fact, all the circumstances related to his case which may be included in the term environment.

Educative influences must be brought to bear upon the patient, and all associated with him as to the nature of the disease, its mode of spread, and other cognate matters, so that they may be armed against the common foe.

Attempts must be made to regulate his mode of life, to keep the patient and his family under constant supervision; and the disease must be carefully searched for amongst those with whom he has been in constant association. The affected individual should at this stage be dealt with from a central bureau, presided over by a medical man, who is an expert in the disease and who will decide the best means of dealing with the case, having regard to the stage of disease, home conditions, occupation and the other details which will serve as determining factors as to the method to be adopted in dealing with the case in point. Each case must be considered on its own individual merits, and while domiciliary treatment and supervision of home conditions and examination of contacts will be appropriate in one case, sanatorium treatment, with the same precautions regarding environment and contacts, will be a *sine qua non* in another.

Again, in a third set of cases, it may be found necessary to insist on segregation of the individual, on account of the advanced stage of the disease, so as to remove a grave source of danger from the community. This work can only be undertaken from a central bureau or clearing-house, which would be linked up with the

(1) Public Health Department,
(2) Sanatorium,
(3) Hospital for advanced cases,
(4) School Medical Inspection Department, and
(5) Labour Colony,

with the Public Health Department as the controlling and presiding authority.

I have endeavoured to indicate the co-ordination which should exist between the various agencies at work and have taken the liberty of modifying Sir Robert Philip's diagram to illustrate my point.

Let us now consider in detail the part played by the various anti-tuberculosis agencies.

I.—Health Department.

As already indicated, the Health Department should be the presiding and controlling authority in this connexion, and its efforts will be expended in the following directions:—

(*a*) Notification of Medical Practitioners.—The main object of notification is to supply the Public Health Department with information as to the extent and distribution of the disease, and it is obviously impossible to attempt to control a disease if these particulars are not available.

Notification is, in itself, quite useless, unless it is the precursor of a definite, well-organized line of procedure, bearing both on the prevention of the disease and on the relief of the actual sufferer.

In the words of Leslie Mackenzie: "It enables the Health Authority to bring the full force of an improved environment to bear on the specific needs of the individual patient."[2]

On the receipt of a notification, each patient should be visited by a qualified health visitor, preferably a woman, who would investigate all the circumstances of the patient as to home environment, and would endeavour to bring the patient and those in contact with him under direct educative influence as to preventive measures by means of literature and actual personal instruction.

* Read at a Meeting of the Queensland Branch of the British Medical Association on August 4, 1916.

It cannot be too strongly insisted on that such visits should be regularly and systematically repeated, so that the supervision may be continuous in nature.

Isolated visits are worse than useless, and simply give a mistaken sense of security.

Particular attention should be paid to "contacts" of the patient, who are in danger of contracting the disease, who should be examined medically by an expert at the Central Bureau, and all infected and suspected cases kept under a rigid supervision.

The possible part played by occupation, food supply, defective housing, insufficient means of subsistence, deficient nourishment, etc., on the incidence of the disease should be investigated, and the help of appropriate officials enlisted in the effort to combat factors tending to tuberculization.

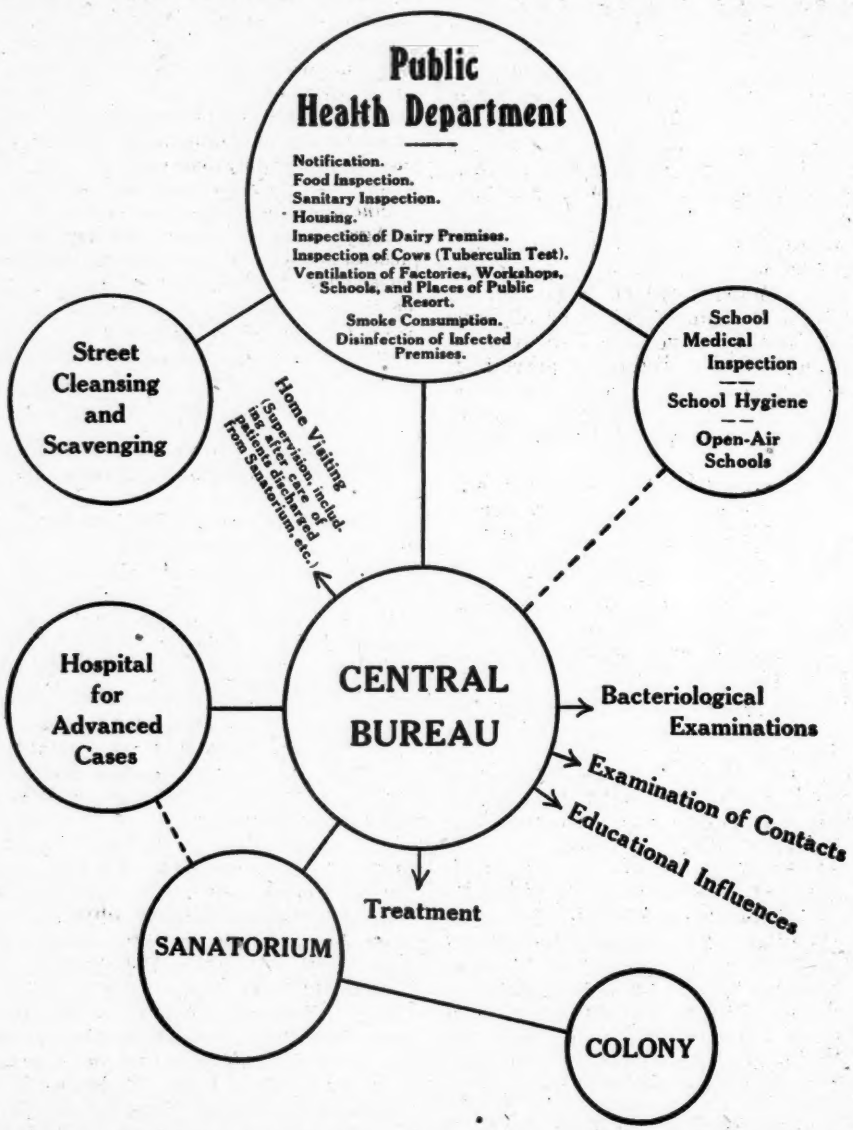
As the result of notification, efforts are directed not merely to the amelioration of the lot of the individual, but are also undertaken in the interests of every member of the community.

(*b*) Housing.—In a new country like Australia, the problem of housing does not bulk so largely as in older countries.

The final report of the Departmental Committee on Tuberculosis (England), 1913, contains the following important pronouncement:—

> The Committee believe that much may be done to assist in preventing tuberculosis by improvement of the housing conditions in this country. There is no doubt that dirty, ill-ventilated, dark, damp and otherwise insanitary houses are provocative of the disease.

Tuberculosis is essentially a social disease, and is one of the penalties we pay for civilization.



It is comparatively rare among primitive man, and only becomes a force to reckon with when primitive races adopt the methods and errors of civilized communities. The housing problem is one in which, on account of its importance to the health of the community, the public health authorities should have the liveliest interest and be fortified by the fullest powers. That new buildings should be erected without proper supervision during erection and thorough inspection after completion by the Public Health authorities, local and State, is a practice fraught with the greatest danger to the community.

Another aspect of the same question is in connexion with the domiciliary treatment of tuberculosis.

A great proportion of the patients suffering from pulmonary tuberculosis, who are treated in their own houses, are in an advanced stage of the disease, and are highly infective in character. The question then arises how far can domiciliary treatment be carried out so as, on the one hand, to benefit the patient and, on the other, to ensure that he will not be a danger to the community.

Efforts at treatment on this basis will, it is to be feared, never be satisfactory, and from the point of view of inspection there can be little doubt that, even with skilled supervision, of necessity intermittent in its character, the danger to the community must be enormous.

The sputum from an advanced case contains the most virulent form of the tubercle bacillus. By the act of coughing or sneezing the virulent material is showered or sprayed to a considerable distance. It will infect clothing, floors, walls and food, and be conveyed and disseminated by the agency of flies.

Its entrance into the respiratory and digestive tracts of healthy persons is accomplished with ease, and fresh cases result.

The existence of highly infective "open" cases, dotted all over the area in urban districts, is a grave source of danger to the community, and cannot be rendered safe, even with the most careful supervision. The segregation of advanced infective cases is the only solution of the problem, and it must be isolation to a finish, otherwise it will be futile.

In 1906 the Scottish Local Government Board, in a memorandum on the Administrative Control of Pulmonary Phthisis, addressed to local authorities, advocated strongly the isolation of advanced cases for the sake of the public health, and the circular contains this arresting statement: "The isolation of such dangerous cases is a primary duty of the local authority." If we wish to eradicate consumption, it is obvious that we must direct our main efforts against the primary causative factors and occupying a most prominent place amongst such factors is the infection due to the presence of advanced cases in the community. Such an eminent authority as Koch regarded advanced cases of phthisis as being the principal sources of infection of the disease.

Closely allied to the housing question are the sanitary efficiency of—

(1) Factories and Workshops,
(2) Schools, and
(3) Places of Public Resort.

(1) Factories, etc.—That occupation plays an important part as a causative factor in pulmonary tuberculosis is not surprising, when we consider the essentially artificial environment in which the worker spends his working hours.

Aggregation of population in crowded urban centres, attracted thereto by outlets for employment and higher wages, and the special dangers associated with certain trades and occupations are factors which increase the complexity of the question.

Certain occupations involving the inhalation of foreign particulate matter are provocative of lung disease. Among these may be mentioned steel grinders, stone cutters, potters, file makers, cutlers, miners and quarriers.

Much has been done by beneficent legislation to improve the lot of the worker, to minimize the danger of such occupations and to secure efficient ventilation and cleanliness in the factory and the work place.

(2) Schools.—The problem of tuberculosis as it affects the child is the bedrock of preventive effort.

In our schools we frequently come across in young children a condition in which the child's general nutritional state is much below par: in which the soil is well prepared for the seed. This condition is so obviously the precursor of tuberculosis infection that it has been called "pre-tubercular." The name has very little to commend it from the scientific point of view; but, at least, it conveys this idea, that, in these cases, the danger of infection of the germ of tuberculosis is an imminent one.

What are the factors which contribute to this state of lowered nutrition? They may be expressed shortly as the environment of the child, and, as such, affect him from the hour of his birth. Before school age the various adverse conditions which are brought to bear upon him constitute the contributing factors in the causation of infantile mortality, which is responsible for a most appalling wastage of infant life. This is a very large question, and one into which I do not propose to enter; but it may be said shortly that the most important factor contributory to the large death-rate amongst infants is the lamentable lack of knowledge on the part of mothers as to even the most elementary physiological facts which underlie the problem of feeding and caring for the delicately-adjusted organism which they are called upon to rear.

Let us now consider the child's environment during school age. The provision of schools which are as perfect as the ingenuity of man can make them, from the point of view of hygienic efficiency, is, I venture to affirm, a fundamental duty of our educational authorities, and is one which, I regret to say, is not always realized and acted upon. Every parent has a right to demand that the school where he is compelled to send his children shall be, from the point of view of ventilation, lighting and cleanliness, everything that the wit of man can devise and the dictates of science suggest. It is in the school environment that the developing organism, so sensitive to every external stimulus, be it for good or for ill, has to pass a very large proportion of his waking

hours at the most critical time in his developmental history.

"The tuberculosis of a people begins in the nursery and the schoolroom. It is to the nursery and schoolroom that observation and effort should be directed if measures for the eradication of tuberculosis are to be fundamentally sound and practically effective"—Philip.[3] The strict supervision of the sanitary condition of our schools, combined with the careful medical supervision of school children, if effectively carried out, constitutes a most important factor in the fight against tuberculosis. It has been shown that the condition of malnutrition so prevalent among children is due largely to errors in dietary, want of fresh air, dirty surroundings in the home and errors in clothing, and that this condition prepares the soil for the reception of the germ of tuberculosis. If the child's environment is transferred from the unhygienic home to the doubtfully hygienic school, his ultimate chances of developing into a healthy and useful citizen would appear to be rather remote.

A common error made by those responsible for educational matters is a tendency to subordinate the needs of the body to those of the mind.

In a climate like that of Australia, schools should be of the open-air type. Educational processes should be made to fit into a general regime, calculated to build up the growing body, and should be, as far as weather conditions will permit, conducted entirely in the open air. School medical inspection and the hygiene of schools should be made to fit into a co-ordinated scheme, and should be in the closest touch with the central Tuberculosis Bureau and its staff. The maximum of efficiency will be attained if this work is directly controlled by the Public Health Department.

(3) Places of Public Resort.—Under this heading may be included theatres, public halls, concert rooms, places of public worship, cinema theatres, and the like. It must be admitted that, from the public health standpoint, the supervision of such places is superficial and inadequate.

The problems involved are mainly ventilation and cleanliness, and the strictest compliance with stringent bye-laws to accomplish these ends should be insisted on by the responsible authority.

It is obvious that ill-ventilated, uncleanly theatres and picture-houses are a grave menace to the health of those frequenting them, and that the conditions described are such as to lead to the transmission of communicable disease, notably tuberculosis.

The Health Act should have provisions enacting that notice of intention to build or open public buildings should be given to the Commissioner of Public Health, such notice being accompanied by plans and specifications, showing the mode of construction, method of drainage, ventilation and lighting of such buildings, indicating their position in relation to adjacent premises and showing the position and distribution of sanitary conveniences, and making it unlawful to commence the construction, alteration or extension of any public building without the approval and consent of the Commissioner. Every local authority should, in addition, be compelled to notify the Commissioner before the construction, etc., of any public building is commenced within its area.

Full power should be given for the inspection from time to time, and at any time, of any public building or place of public amusement by any public health official or officer of the local authority.

The Commissioner should also be able to control the number of persons admitted to places of public amusement and public resort (including places of worship), so as to ensure that no overcrowding takes place. Periodical visits should be paid to cinema theatres (especially those running the so-called "continuous" form of entertainment) and other places of popular resort, to take samples of the air and submit them for chemical and bacteriological examination, while the dust from such places should be periodically examined for the presence of the tubercle bacillus and other pathogenic germs. In this way the caterers for public amusement would be taught to realize the importance of ventilation and cleanliness, and the dangers of overcrowding from the standpoint of the health of the community. That such places are an important factor in the propagation of tuberculosis and other communicable diseases cannot be gainsaid, and it is obviously the duty of departments charged with the control of the measures of prevention to direct their energies in the direction of minimizing, and, if possible, abolishing this source of public danger.

(To be continued.)

A POINT IN TECHNIQUE IN THE CULTIVATION OF MENINGOCOCCUS.

By **R. O. Douglas, M.S. (Melb.),**
Surgeon to Bendigo Hospital.

That the meningococcus is an organism very susceptible to external influences is a fact upon which all recent authors have laid emphasis. Many of the difficulties in the way of its easy cultivation have been overcome and the factors governing its growth definitely worked out.

Its optimum growth temperature is generally recognized as about 36° to 37° C., and growth ceases at any temperature above 42° C.

The minimum temperature at which growth will take place was stated by Albrecht and Ghon, the first investigators, to isolate the meningococcus from the throats of non-meningitic persons, to be between 25° and 27°C. Gordon holds that the meningococcus and parameningococcus will not grow at 23° C., and considers that this is an important point in differentiating them.

Elser and Huntoon state that it does not grow below 25° C. Foster and Gaskell hold that certain strains will grow feebly at 23° and may give a profuse growth at 25°. Elser and Huntoon found that the meningococcus may, in certain cases, survive in the ice-box (8° C.) from four to six days.

A considerable amount of work has been done on the effects of higher temperature, but the low temperatures have been comparatively neglected.

Most observers unite in stating that the meningococcus is difficult to grow, and that, though successive subcultures become more vigorous, yet unaccountable death of the organism frequently occurs.

Foster and Gaskell point out the necessity for inoculating large quantities to ensure successful subculture, and after advancing various theories to explain the death of the organisms in subculture state that "the point is one of considerable practical importance, but its explanation has not yet been given. It is possible that physical conditions are the determining factor, for a successful subculture is usually impossible on a serum-agar slope which has become too dry."

They further state that "colonies may not appear in the first 24 hours of incubation, but yet be found two or three days after sowing; there is apparently an inhibition of the organism; it does not die, but it does not immediately develope. . . . This inhibition also occurs in the case of plates from throat swabs; these should therefore always be kept for 48 hours."

A brief and very inconclusive investigation in the ward and laboratory here indicates that at least one of the factors underlying this inhibition may be brief exposure to cold.

It has been recognized for a long time that any attempt to swab throats in the same way as the Board of Health diphtheria swabs are manipulated was almost always a failure.

Bruns and Hohn state that, in a series of nearly 3,000 cases of the swabs sown at once, 32% were positive, of those brought by special messenger 17% were positive, by post within 24 hours 4.7% positive and no swab over 48 hours old was positive.

Desiccation and length of time before the organism is placed on a nutrient medium have been the principal factors used in explaining this.

In view of the above facts, every inoculation made here was sent to the incubator as soon as possible. In no case was the period elapsing more than ten minutes. Nevertheless, right through the series of the 1915 outbreak and the early part of the 1916 epidemic a considerable number, both of primary cultures and also subcultures most unaccountably failed to grow.

The time elapsing between inoculation and the start of incubation was cut down as much as possible. The percentage of failures was not appreciably less. Joint effusions were particularly puzzling. Prolonged search would always in the early aspirations demonstrate diplococci, but only very rarely was a growth obtained. At this time cultures were made with a platinum loop on to an ascitic agar slant. Blood (human) agar was tried, but the results were very little better.

Next several cubic centimetres of the effusion were allowed to drop straight from the needle in the joint on to the surface of the tube, and here blood agar gave a considerably higher percentage of growths. Nevertheless, in a very rapid effusion into a knee-joint, where many diplococci could be seen in the stained smear, no growth was obtained.

A few days later another patient developed a knee affection of the same type, and it was resolved to try the effect of warming the tubes before inoculation.

Two tubes of ascitic agar slants were placed for some minutes in a bowl of water at 98° F. (26.6° C.). The knee was then punctured, and one warmed tube and one cold tube were inoculated, each with a few cubic centimetres, direct from the needle. Both were at once placed in the warm water. After the aspiration was done, a little of the fluid first drawn off, which had been caught in a test-tube, was inoculated with a fine platinum loop on to the other warmed tube, and also on to a cold one. All were kept in the bowl with the water at 98° F., until the incubator was reached.

Within 30 hours there was a profuse growth in the heavily inoculated warmed tube, and within 36 hours at least half a dozen colonies in the other lightly inoculated warm tube.

No growth occurred on either of the cold inoculated tubes, though the total time elapsing in the heavily inoculated tube between the joint and the warm water could not have been more than a minute or so.

No growth occurred in either of the cold inoculated tubes, even at the end of four days.

The colonies in the warmed tubes were macroscopically similar to the cultures already obtained from the cerebro-spinal fluid, and microscopically were formed of Gram-negative diplococci of the meningococcus type.

Following on this experience, all tubes or plates for inoculation or subculture were suitably warmed by water or in the incubator before use. Since this has been done there has been no case of a subculture failing to grow, except in the following instance; but our experience is far too limited yet to warrant any definite conclusion.

The exception just referred to occurred thus: A culture from the cerebro-spinal fluid of the case last admitted to the ward had been kept going on warmed ascitic agar for about a week. Since the text-books state that it is vitality increases with transfer, it was thought safe on the 24th of the month to transfer the culture to a cold tube, which was heavily subcultured and put at once in the incubator. This subculture was inspected on the 26th, and no growth had taken place. Testing along the line of culture and making a smear, a number of swollen and various-sized organisms were found, but no typical healthy diplococci. It was assumed that the culture was lost, but both tubes were left in the incubator, in the hope that growth on the cold inoculated tube might still take place.

On the morning of the 27th I decided to give a warmed tube a try, and the tube originally used on the 24th to subculture from was liberally inoculated again into two warmed and two cold tubes. Next morning there was good growth on both the warmed tubes, but no sign of growth on the cold inoculated tubes, nor did any develope, though the tubes were left in the incubators for a week.

Since then material for further investigation has been scanty, as no lumbar punctures or aspirations, etc., have been necessary. Several experiments gave fairly uniform results in both warm and cold inoculated tubes, both positive and negative.

One most important exception, however, occurred. In a contact case, a baby sister of an adult meningitis patient, a smear for the throat showed large numbers of Gram-negative diplococci. An initial culture previous to the above experiment on to a cold tube failed to give any growth of Gram-negative diplococci, though several other types of bacteria grew well. The smear, however, was so positive-looking that the patient was isolated in the meningitis block.

Next day a fresh series of cultures was made. A stout curved platinum wire, with a large loop, was used, and inoculations were made from high up on the posterior pharyngeal wall and the back of the uvula on to two warmed and two cold tubes of ascitic agar, each being placed at once in the warm water and all transferred as soon as possible to the incubator. At the end of 30 hours colonies of Gram-negative diplococci of the catarrhalis or meningococcus type were predominant in the two warm inoculated tubes, but a fairly persistent search of all the even remotely similar colonies (macroscopically) in the cold tubes failed to demonstrate any Gram-negative diplococci.

These experiments, too brief, inconclusive and far too few to base any dogmatic statement upon, are nevertheless indicative of what may be of extreme importance in the investigation of the so-called "carriers." The figures already quoted from Bruns and Hohn might perhaps have been quite different in the direct inoculation percentage if made on to warmed tubes.

It is not willingly that one rushes a few isolated and incomplete observations into print, but it seemed best to report the above three experiences at the earliest opportunity. One reason for doing so is that, if even a very small proportion of meningococcus "carriers" be found in whom a growth cannot be obtained except on a warmed medium, the necessity at once arises for all inoculations from "suspects" to be made directly on to media so treated. The second reason is that the meningitis epidemic is so prevalent at present that there is a very large amount of material available for investigation, and the opportunity may not occur again, though, unfortunately, this is rather unlikely. The majority of investigators are practically agreed that the meningococcus is perhaps the most easily killed of this group of Gram-negative diplococci.

The isolation of the menigococcus is a difficult operation at any time. The initial cultures are recognized by all bacteriologists to be the most difficult to grow, and anything that may possibly hinder it should not be permitted.

For the present, therefore, it seems to me that, in all attempts to grow the meningococcus, much greater certainty of success may be expected if the medium used is warmed to optimum temperature before the inoculation.

References.

Albrecht and Ghon—"Ueber die Ætiologie und Pathologische Anatomie der Meningitis Cerebrospinalis Epidemica," *Wien. Klin. Wochensch*, 1901, XIV.

Gordon, M. H.—"Identification of the Meningococcus," *R.A.M.C. Journ.*, Vol. XXIV., 1915.

Elser and Huntoon—"Studies on Meningitis," *Journ. Med. Research*, Vol. XX., 1909.

Foster and Gaskell—"Cerebro-Spinal Fever," University Press, Cambridge, 1916.

Bruns and Hohn (quoted from Foster and Gaskell)—*Klin. Jahrb.*, XVIII., 1908.

INSECTICIDAL FUMIGATION IN SHIPS, WITH SPECIAL REFERENCE TO THE USE OF HYDROCYANIC ACID AND TO THE PREVENTION OF SHIP-BORNE YELLOW FEVER.

By **C. E. Corlette, M.D., Ch.M., D.P.H.,**
Sydney.

A good deal of anxiety has been felt as to the possibility of the introduction of yellow fever into Australia and Eastern Asia by vessels using the Panama Canal route. It is well known that infection may be carried in ships. There have been several local European epidemics caused in this way, though the winter temperature in European ports is too cold to perpetuate the life of the necessary insect carriers. The vector of yellow fever is a mosquito, the *Stegomyia fasciata*, and it is known that the same species of mosquito, but as yet uninfected, is indigenous in various parts of Australia. Therefore, an invasion of Australia by the disease might have very much more serious consequences than would be the case in Europe, for the *Stegomyia* would not be got rid of by the natural influence of climate as winter approached. The colonization of a vessel by specimens of *Stegomyia fasciata* is always a possibility if it passes through territory which it inhabits, but the colonizing mosquitoes would usually be uninfected. In rare cases there might be infected individuals among them. Colonization might occur from ports on this side of the Pacific, and though infection would not come from this side, the ship colonized here might thus be prepared for infection elsewhere. To become a carrier of infection, a mosquito has to bite a patient within the first three days of his illness, and this mosquito does not then become infective until twelve days afterwards. From this time onwards, if it bites a non-immune human being, it infects him with the disease. The mosquito remains dangerous for several weeks. The man who has been bitten shows no sign of illness for from three to six days, and then the attack commences. But by no means all cases of yellow fever conform to one type. Attacks may vary from a slight indisposition to an illness of the greatest severity. A mild case, considered separately, may be quite unrecognizable as yellow fever, and would only be suspected from its association with a coincident epidemic of the disease. A sporadic or single case of this kind is therefore far more dangerous to others than one of a clinically severe type. If such a case occurred on board a vessel colonized by *Stegomyia fasciata*, these mosquitoes could become infected and cause an epidemic on board, or later on could bite

men working cargo and introduce a shore epidemic. Quite possibly, the first case or two might not immediately be diagnosed. Even if the mosquito were not indigenous to the port, an infected passenger might disembark apparently well, and travel up to a town where the proper vector is a natural inhabitant, and there go down with the disease, or, worse still, might have a mild, undiagnosed attack. The incubation period of yellow fever is quite long enough for possibilities of this kind. But whether shore cases occurred or not, the vessel would be dangerous to board, and could not safely be manned or travelled in, nor could cargo be worked, except by immune persons, unless every living mosquito inhabitant were destroyed before it was attempted.

This is serious enough. The quarantining of a large mail steamer is a very costly business. It means that a large amount of capital is suddenly thrown idle and made unproductive, while expenses of upkeep and management go on all the time, to say nothing of the interference with commerce that occurs. It is obvious that any method that gives reasonable promise of cutting down the length of quarantine and effectually disposing of all danger of infection is worth very careful consideration, for it means that this loss can be to that extent prevented. And if this be so, we should adopt the policy that pays, not the perilous "wait-and-see" policy that has cost the British people so much in military matters. War against disease is no exception. We should be ready to deal with an emergency before having the necessity thrust hastily upon us.

The problem is really a much more serious one than the loss of a few thousand pounds over the detention of one ship. It is a matter of the gravest national importance, on which may depend the safety of hundreds of thousands of Australian lives, and many millions of money. If an epidemic of yellow fever is once started in Queensland or in northern New South Wales, the potentialities of its spread are not small, but quite incalculably great. It is not at all impossible that such an epidemic would sweep through towns and cities as quickly and universally as has occurred in epidemics of dengue. Dengue is a mosquito-borne disease of the same family as yellow fever, but not dangerous to life. When dengue invades a new town it searches it very thoroughly, so that comparatively few escape an attack. What an appalling calamity it would be to have a severe type of yellow fever attacking town after town in a similar way, but with a death-rate of 50 out of every hundred persons attacked! I do not think that such a thing is very likely to happen in Australia, but it has happened in other parts of the world, and we cannot absolutely certify that it could never happen here. I do think, though, that it might quite easily happen in a densely populated country such as southern China, and, once started, very little could be done to stop it. But whatever individuals may think of the probabilities, no one can be quite sure, and all wise men will agree that no chances should be taken where our own country is concerned.

Modern methods of yellow fever prevention are mainly based on the measures adopted to shut off infection through mosquitoes. Apart from general measures undertaken to diminish the number of these insects bred near human habitations, certain special means are employed. Patients known or suspected to be suffering from the disease are screened off by mosquito netting, so as to prevent them from being bitten; but since their infectivity for mosquitoes is in the first three days of the disease, they may be bitten before the nature of the disease has been diagnosed, or even suspected. In the next place, an attempt is made to destroy all the mosquitoes infesting a house which has sheltered a yellow fever patient. These insects, or some of them, have presumably become infected, and would be possible carriers of disease to other human beings.

For the destruction of mosquitoes infesting dwellings, numerous means have been tried. One frequently adopted has been fumigation with pyrethrum powder, derived from the dried flowers of the "marguérite" chrysanthemum. The powder is burnt, using from 1 to 2 lbs. per 1,000 cubic feet of space. Its smoke stupefies the insects, which fall to the floor and are then swept up and burnt; it is said that 2 lbs. per 1,000 cubic feet kills most of them but some are only stupefied. This is one of the methods recommended by the Public Health and Marine Hospital service of the United States. American authorities state that fresh pyrethrum powder must be used, and that it soon loses its efficacy when stored or exposed. This is directly contradicted by the compilers of the *British Pharmaceutical Codex*, who state that the insecticidal properties of pyrethrum are due to a constituent known as pyrethrotoxic acid, which is not volatile, and does not deteriorate on keeping. The evidence of practical experience seems to be conclusively on the side of the American authorities. But as regards ship fumigation, we scarcely need to take pyrethrum into practical account. If it were necessary to fumigate a hold containing cargo, supposing it were practically possible to carry out the fumigation, which is more than doubtful, it would be quite impossible to sweep up and remove fallen mosquitoes. And if we had to fumigate a steamer presenting, say, 400,000 cubic feet for treatment, we could not get 800 lbs. fresh pyrethrum, even if we were prepared to pay the cost, which would be considerable.

Another fumigant enjoying a reputation in New Orleans and in many other American towns as a mosquito eradicator is camphenol or "culicide," the liquid obtained by mixing equal weights of camphor and phenol. This is volatilized by the heat of a spirit lamp. Three fluid ounces are said to be enough for an ordinary room. It is obvious that for ship fumigation this is as impracticable as pyrethrum.

Formalin, or formaldehyde, is mentioned only for the purpose of dismissing it. It cannot be taken into serious consideration as an insecticidal fumigant. This is somewhat surprising to one accustomed to regard fumigants from a bactericidal point of view; but there is no doubt about the fact.

The fumes of burning sulphur have also been employed in the destruction of mosquitoes infesting houses, and with a great deal of success. In 1906 the Public Health and Marine Hospital Service of the United States issued a set of rules for combating

mosquito-borne disease. Rule 18 runs: "Houses should be cleared of mosquitoes by burning 1 lb. of insect powder or 2 lb. of sulphur to 1,000 cubic feet of space. The mosquitoes will fall to the floor, and should be collected and burned." Lieutenant-Colonel Giles,[1] in his "Handbook of the Gnats or Mosquitoes," also highly recommends this fumigant, but he says that in houses it is futile to burn sulphur in the ordinary way. He recommends the burning of a series of pastilles made up of one part each of nitre and charcoal to eight of sulphur, incorporated with gum; each pastille to weigh four ounces. But when we come to deal with ships we meet with some grave difficulties. If mosquitoes have to be swept up and burnt, it cannot be done in holds containing any cargo. This difficulty is the same as that with pyrethrum. Furthermore, the sulphur dioxide generated by burning sulphur is a very active and very destructive chemical substance, and has a great tendency to spoil many kinds of cargo. Flour is ruined by it,[2] and grain has its germinating power quickly destroyed, coloured fabrics are bleached, metals are corroded. The charcoal packing used as insulating material for refrigerating chambers absorbs it cumulatively, and retains it tenaciously, and a 5% vapour may cause spontaneous ignition.[3] When shipping people have had experience of its action on cargo they object to it very strongly, and insurance offices dislike it in the same way.

Before considering the next chemical fumigant, it should be noted that for insect destruction very good results are reported to be obtained by simple heat, or hot air fumigation. Bugs die at 113 F.°;[4] mosquitoes (*Stegomyia fasciata*)[5] and fleas[6] perish at the same temperature. Cockroaches succumb to a temperature of 120° F.[7] Lice (and their eggs) cannot survive 131° F.[8] Many members of the beetle tribe are very resistant to heat, but ordinary weevils do not stand 122° F.[9] *Bruchidae* (small weevils, pea-weevils) die in five minutes at 140°F. In connexion with weevil destruction it may be noted that seeds can withstand a high temperature without injury when dry, but not moist heat, and water above 140° F. is often injurious. Seed wheat has supported a temperature of 240° F. for an hour without material injury to its germinating power.[9] Maize appears to be much less resistant. Hot air fumigation has been successfully employed in the United States for insect destruction in flour mills,[10] the application of heat being continued for some hours. G. W. Herrick,[11] a well-known American authority, in discussing the subject, remarks that "heated air would be an ideal insecticide if it were more easily available." This condition has not yet been fulfilled, for heat fumigation in mills has so far only been carried out by passing steam under pressure through radiator pipes, so as to heat up the air in the space. Such a method can hardly be described as "easily available," since it requires the installation of a costly, formidable, and immobile plant, debarring it from general use. I would suggest that a convenient and economical way to try heat fumigation would be to employ directly the exhaust gases from an internal combustion engine, such as that of a motor-car. This could be brought down to a more moderate temperature by mixing it with an induced current of fresh air, procured by placing the exhaust pipe in the centre of an inlet flue. The use of a washed exhaust would be subject to some patent restrictions, but washing could be dispensed with in many cases.

The question whether heat fumigation is applicable to ships must, I think, be decided in the negative; but the point will be discussed later.

Carbon bisulphide fumigation is largely used for the purpose of killing weevils. For this class of insect it is highly recommended; but it is by no means the most successful general insecticide, and it is not employed against other insects as frequently as formerly. Even against weevils, which are highly resistant to all insecticides, it is only partially successful, as the larval forms are so deeply situated within the substance of the infested grain as to be beyond effective reach of the vapour in many instances. A fully saturated atmosphere of carbon bisulphide has a highly lethal power, but an unsaturated atmosphere shows a greatly diminished effect, and may take a long time to produce any useful result. Its effectiveness is greatly increased by a rise of temperature and diminished by a fall. It is applied by placing it in shallow pans on the top of the grain, or sometimes by pouring it right into the mass of grain. For killing weevils, the amount recommended by authorities at one time was 2 lbs. per 1,000 cubic feet or per 1,000 bushels of grain. Careful experimental work has shown that this is not enough. W. C. O'Kane,[12] in a more recent work, has laid down the requirement as 10 lbs., with an exposure of 24 hours. This does no harm to the grain, whether for seed or for food purposes. An important paper by W. E. Hinds and W. F. Turner[13] summarizes the results of their experiments as follows: "Grain-infesting insects may be destroyed with carbon bisulphide cheaply and effectively by even an application of 5 lbs. per 1,000 cubic feet in exceptionally tight compartments, while the temperature is above 70° F. It requires but a few hours to kill the weevils if a strength of gas equal to one-quarter of a saturated atmosphere can be maintained, and provided the temperature is high enough to insure a considerable degree of vital activity on the part of the insects. Fumigation work with temperatures ranging below 60° F. appears to be largely ineffective and inadvisable. It is estimated that at most the expense of treatment will average less than a cent (American) per bushel."

Carbon bisulphide has, however, a very bad effect on flour, spoiling it for baking purposes.[14] Possibly the flour may recover itself later on; but further observation is required. The vapour forms a highly explosive mixture with air; 5 lbs. per 1,000 cubic feet is equivalent to about 6.5% by weight in the air, and a mixture of this strength is known to be a very dangerous one.[15] The danger of explosion is not abolished even if the carbon bisulphide be used in much smaller proportion, at least under the technique above described, because the heavy vapour flows down into the lower parts of the space, and, owing to its slow diffusibility, forms pools of strong concentration, which will last, in a still atmosphere, for a considerable time before diffusion has caused

an even dispersion of the fumigant all over the chamber. No doubt these pools are very useful, from one point of view, by producing a relatively strong vapour bath for insect-killing purposes; but, so long as air is used for the mixture, instead of a non-explosive, inert diluent, the danger of explosion must remain. The suitability of carbon bisulphide as a fumigant for use on ships will be discussed at a later stage.

We come now to the consideration of what is, beyond all question, the most powerful and most important of all insecticidal fumigants. This substance is hydrocyanic acid. Hydrocyanic acid, often written as HCN, its chemical symbol, is a liquid boiling at 80° F. Its vapour is lighter than air and readily diffusible, contrasting in this respect with carbon bisulphide vapour, which is over 2½ times as heavy as air, and diffuses very slowly. For fumigating purposes it is generated by mixing, in proper proportions, water, commercial sulphuric acid, and either potassium cyanide or sodium cyanide. It is a curious fact that the use of hydrocyanic acid as a fumigant seems to be practically unknown outside of the United States (California and Florida), South Africa and Australia. But in these countries it is by far the most extensively used of all fumigants, so much so that, amongst fruitgrowers and nurserymen "fumigation" always means HCN fumigation, unless expressly stated otherwise. In citrus orchards it is constantly used for the destruction of the scale insect, which it does very efficiently. It is also used for preventing the export of noxious insect pests on fruit, it being compulsory for every case of oranges exported from New South Wales to be fumigated in this way before it is allowed to leave the wharf. It is used all over the country for the fumigation of flour mills on account of a well-known pest, the *Ephestis* moth; it not only kills the moths, but it kills their eggs, and kills the larvæ and pupæ in the flour. When ventilation is re-established, the hydrocyanic acid quickly disperses by the joint action of diffusion and of convection currents, leaving the flour quite unharmed. It is regularly used in the living quarters of large Australian coasting steamers, and in railway carriages, for the destruction of bugs and cockroaches. In South Africa it is employed for a similar purpose; South Africa can claim the priority for the use of this fumigant as a bug-killer in railway carriages. As a bug-killer it is thoroughly successful, and experiments show that, when properly applied, it readily destroys their eggs, as well as the insects themselves. When the fumes reach flies they fall in a few moments—practically instantaneously. There is only one insect pest difficult to kill with HCN applied in ordinary dosage, and that is the weevil. For some reason or other, these insects are specially resistant to all fumigant insecticides, and require special treatment by large doses, long applied. Hydrocyanic acid will kill the germinating power of grain in a much shorter time than carbon bisulphide; but it is far less deleterious in this respect than sulphur dioxide. It is inflammable when pure, and though it would become potentially explosive if mixed in sufficient quantity with air, yet the percentages used in fumigation would have to be multiplied by a very large figure before that contingency would need to be thought of. Moreover, its ready diffusibility prevents the accumulation of strong vapour at any part. It is, indeed, so diffusible that, in the fumigation of houses, so much is lost through the walls and ceilings that a considerable surplus of material is always used, so as to keep the percentage from falling too rapidly below the point of efficiency.

Hydrocyanic acid is, of course, very rapidly poisonous to human beings. But habitual users of the vapour say that it is quite easy to employ it safely, and that the taste gives warning before actual danger is incurred. It certainly is a very remarkable fact that, despite the poisonous character of the fumes, and the varying intelligence and carefulness of users, no deaths seem ever to have occurred in New South Wales from this cause. According to R. S. Woglum, California has been equally fortunate.[16] I have heard that, in South Africa, at least in earlier days, there were some fatal accidents among Kaffirs, and I have heard of one or two narrow escapes on board ship at Sydney. The drunken sailor or fireman is the usual cause of worry. Unless every place is locked up and careful inspection carried out beforehand, a drunken man may get in and be killed. No potent fumigant can possibly be made entirely fool-proof. And I have no doubt that if hydrocyanic acid fumigation were in very much more extensive use for ship work, there would sometimes be men killed, notwithstanding every care. But it may be worth while to take what risk there is in it, seeing what greater risks it may prevent. It should not be forgotten that, in spite of all precautions, a large number of men are killed every year by accidents which occur in connexion with the working of cargo. This toll of life is taken in the production of wealth. If that be justifiable, it is also worth while incurring a little risk, really a much smaller risk in its totality of effect, if it will insure a country against the serious loss of wealth, to say nothing of life or health, which would take place with the introduction of an epidemic. And an epidemic that merely produces morbidity without any deaths causes great economic loss. No battle has ever been won without taking risks, and every fumigation that is carried out is a battle incident in the warfare against disease. If risk is inseparable from the operation, the risk is worth taking if the welfare of the country demands it.

(To be continued.)

Reports of Cases.

A CASE OF DIABETIC CONJUNCTIVITIS.

By **G. H. Hogg, M.D.,**
Launceston, Tasmania.

Mrs. —., a lady of eighty years of age, consulted me for inflammation of the right eye of four or five weeks' duration. The eye was very red, and the vessels of the ocular conjunctiva were acutely congested, and looked almost as if they were threatening to enter the cornea; the corneal border of the conjunctiva had a slightly raised appearance, not unlike that sometimes seen in spring catarrh.

There was some lachrymation, but no mucoid secretion. The cornea was normal; there were some old adhesions of the iris and some old exudate in front of the pupil. The patient stated that the sight of this eye had been defective for many years; vision in it varied from $^{6}/_{24}$ to $^{6}/_{18}$ part. The left eye was normal.

There was a history of declining strength and loss of weight for some months, which the patient's friends had not unnaturally ascribed to her advancing years, and examination revealed the existence of mitral disease. As the patient was from the country, a specimen of the urine was not obtained until the third consultation. The eye was treated for a fortnight with various applications—boric lotion, oxycyanate of mercury lotion, argyrol, etc.—without success. On examining the urine, the specific gravity was found to be 1,050, and there was a large amount of sugar present. The patient was then dieted, trypsin administered, and all local treatment stopped.

When seen a week later, the eye looked and felt much better, although still red. Much less sugar was being passed, and the specific gravity had fallen to 1,030.

In three weeks' time the conjunctiva of the eye looked normal, the specific gravity of the urine was 1,015 and hardly a trace of sugar could be detected.

Some months afterwards I was informed that the eye was keeping well, and that the patient had continued to put on weight and improve in health; whether the diabetes had relapsed or not I cannot say.

The complete failure of the conjunctiva to yield to local treatment, and the marked way in which it lessened and finally disappeared when the diabetic treatment was commenced was most striking. Whether the old iritis of which there were traces left had been due to a then existing diabetes or not is a question which cannot be answered; it seems hardly likely, however, that a diabetes had existed for many years in this patient. Of course, there is a possibility that the iritis might have been diabetic in causation, and that relapses and improvements might have taken place from time to time, although the patient's history seemed to argue a life of good health and freedom from glycosuric symptoms until a few months before she consulted me.

Conjunctivitis due to diabetes is apparently a very rare condition. In about 150 cases of diabetes which I have seen, this is the only case of conjunctivitis which I have found; cataract, retinitis, and more rarely iritis and keratitis are well known complications, but conjunctivitis is seldom seen, and is not discussed in any of the text-books or articles by authorities which I have consulted. Fuchs, Berry, Roemer, the *American System of Ophthalmology*, Knies, etc., etc., make no allusion to the condition. Dr. Saundby, in his article on "Diabetes" in Allbutt's "System of Medicine," says that "various inflammatory affections of the ocular structures, conjunctivitis, keratitis, iritis and choroiditis, are met with," but no description of the condition is given, nor is any reference made to the rarity of occurrence.

Thanks to the kindness and courtesy of the Secretary, Mr. MacAlister, a very careful search has been made in the Library of the Royal Society of Medicine in London, but no literature on the subject has been found, notwithstanding the fact that books, papers, monographs, English, American and foreign, have been thoroughly examined. The only allusion to diabetic conjunctivitis is in a paper of Dr. Koenig, of Paris, "Les Complications Oculaires du Diabète," *Bull. Soc. Française d'Ophthalmologie*, 1895, XIII., p. 550. From statistics which he obtained at Vichy relating to 500 patients, conjunctivitis caused by diabetes was found in eight.

Reviews.

PRACTICAL MEDICINE.

"Modern Medicine and Some Modern Remedies," by Thomas Bodley Scott,[1] with an introduction by Lauder Brunton, will be read by many general practitioners with advantage. The author claims that it contains practical notes for the general practitioner, and this claim is certainly substantiated. Disorders of the heart, arterio-sclerosis, therapeutic speculation and doubts, under which heading the use of thyroid and suprarenal extracts are dealt with, and chronic bronchitis and bronchial asthma comprise the four main divisions of the book.

The author lays stress on the importance in cardiac cases of estimating the compensatory and reserve power of the cardiac musculature, and draws attention to the valuable aid given by the sphygmo-manometer and the manometer.

In the chapter on arterio-sclerosis the use of thyroid extract is advocated in obese subjects whose blood-pressure is found to be raised. The question of hypothyroidism and the fact that many mild cases are overlooked is dealt with at some length. The combination of suprarenal extract, strophanthus and parathyroid extract in the treatment of Graves' disease is also discussed, while the use of bromides is deprecated. The author also speaks of the benefit resulting from the treatment of some cases of asthma by adrenalin.

The effect of hypodermic injection of pituitary extract in cases of shock is dealt with briefly. In the treatment of chronic bronchitis the more extensive use of autogenous vaccines is urged. On this debatable point many will fail to see eye-to-eye with the author.

The book is well written and readable, and is on somewhat similar lines to Rendle Short's "New Physiology," which the author quotes.

[1] Modern Medicine and Some Modern Remedies, by Thomas Bodley Scott, with a Preface by Sir Lauder Brunton, Bart, F.R.S., 1916. London: H. K. Lewis & Co., Ltd.; pp. 159, Crown 8vo. Price, 4s. 6d.

ROYAL SOCIETY OF NEW SOUTH WALES.

The general monthly meeting of the Royal Society of New South Wales was held at the Society's House, 5 Elizabeth Street, Sydney, on October 4, 1916, Mr. T. H. Houghton, President, in the chair.

Mr. H. G. Smith read a paper on *the essential oil from the bark of Eucalyptus macarthuri*. Some years ago the leaves of this plant were found to contain an oil rich in geraniol acetate and the alcohol geraniol. The oil contains at least 60% of geraniol acetate, and this amount might serve as a standard for the oil to prevent adulteration. He had examined a large number of samples of the oil, which showed great constancy in composition. Some years ago a plantation of six acres extent had been started. The first clipping of the leaves was made a year and nine months later, when the oil showed the same composition as that from full-grown trees. The Federal Government was allowing manufacturers to use alcohol which paid reduced rates of excise provided that they used Australian oils for pharmaceutical purposes and to prepare perfumery. The crude oil was red in colour, due to distillation in iron stills. The acids of the plant dissolved the iron, which reacted with phenols to give the red colour. By agitating the oil with sulphuric acid much of the colour could be removed. He had compared the oil from the bark with that obtained from the leaves. The oil from the bark was similar to that from the leaves containing 60% geraniol acetate, 8% of geraniol, a little pinene and the other usual constituents of eucalyptus oil. Geraniol acetate could be saponified in the cold with alcoholic potash. In this way he had obtained a refined oil almost free from colour. Cultivation was needed to ensure a sufficient supply for commercial purposes. At present 500 lbs. of leaves and twigs were needed to yield 1 lb. of oil. The trees under cultivation in the plantation yield 50% more oil after some years' growth. Perhaps after further selection a still greater amount of oil could be developed in the trees. The bark contained the same amount of oil as the leaves.

ANOTHER PURE FOOD PROSECUTION.

A man named Arthur William Boynton was prosecuted on October 26, 1916, under the provisions of the Pure Food Act, 1908, for selling a drug named Sargol, which was falsely described. In his evidence, Dr. A. A. Palmer, the Government Medical Officer, said that the statement on one of the pamphlets in regard to the process of getting fat was all nonsense. The defendant was fined £10 and £3 9s. costs.

The Medical Journal of Australia.

SATURDAY, NOVEMBER 4, 1916.

The Country's Choice.

It is said that the minority must be content to abide by the decisions of the majority in all constitutional matters. It may be possible for the minority in the Commonwealth, provided that the indications of the state of the voting on the question referred to the people as it appears on October 31 are realized when the full return is available, to accept the decision of the greater number, but it would be too much to expect those whose convictions force them to recognize that an affirmative reply was a matter of honour and loyalty to subscribe to a policy which will be regarded throughout the Empire as degradation and shame. The men of the Empire, of which Australia is and must remain an integral part, are facing a foe as yet unbeaten and active in his offensive and defensive tactics. It is cowardly, despicable and lying to pretend that the issues of the great war are not ours, and that we have no part to play in gaining a victory which shall be complete and abiding. In his able article on another matter, Dr. Richard Arthur recently wrote of the chivalry and self-sacrifice of the sons of Britain. This spirit has been in splendid evidence in those who have given their services voluntarily and who have unflinchingly faced danger and death for King and country. The appeals published in Victoria and New South Wales by the medical practitioners who have had experience of the conditions of war and who understand the need for reinforcements to relieve those in the fighting-line, and thus to lessen the risk these men are running, have told their story to the public so forcibly that it is difficult to understand how more than half the voters have dared to ignore the lesson. The future remains shrouded in obscurity, and no one can tell what may be in store for our countrymen in Europe and for us in Australia. But there is one ray of light which seems strong enough to penetrate the mist. If the remaining votes fail to ensure the required number of men to be sent to stand by those who have taken up arms of their own free will, the loyal men remaining in the Commonwealth, who have hitherto been prevented from offering themselves on account of obligations and disabilities, will throw everything to the wind to make good the behaviour of the disgraced and disgraceful revolutionaries who refuse to recognize honour, loyalty or obedience. We feel that if all else fails, medical men and men whose education has given them a wide view of life will make any sacrifice to save Australia and the Anzacs.

During the 23 days since Class I. has been called up for military service with the Citizen Forces, 178,812 have reported themselves, and of this number 165,857 have been examined. Rather more than one quarter of the men have been found to be unfit physically for military duty. The number of fit is 85,134, or 51.3% of the total, while a further 26,669 are regarded as doubtful and 6,904 as temporarily unfit. It may therefore be computed that approximately 100,000 men between the ages of 21 and 35 years, without wives or families, could be utilized for the safety of the nation. Under existing conditions, exemption is granted to about one-half of those who apply for it. The total number applying for exemption amounts to about 44%, and, consequently, an allowance would have to be made of approximately one-fifth of those fit to serve. This would mean that the men who would have been available under the extended provisions of the Defence Act, had the reply been "Yes," would have sufficed without any volunteers for the reinforcements asked for for October, November, December and January. It is possible that Class I. might yield another 33,000 to cover the requirements for six months. That these young men make the best material for war purposes is not questioned. Perhaps means may yet be found to utilize the best material. Otherwise, older men, and those whose dependents would suffer unnecessarily, will feel themselves com-

pelled to go. In any case, the million voters, who would drag Australia's fair name in the mud and who have no pity for the men calling for assistance, cannot speak in the name of Australia.

THE INTERESTS OF ABSENT PRACTITIONERS.

The members of the British Medical Association determined in the early stages of the war to assist those patriotic practitioners who were giving their services to the country, by attempting to safeguard their interests at home during their absence on military duty. They were assured that their patients would receive adequate attendance at the hands of their colleagues, and would be restored to them on their return. The promise was variously expressed in the different States, but its meaning was uniform. It was understood that when a patient of an absent practitioner applied for treatment, the doctor at home would inform him that he would be willing to act only during his colleague's absence, and that it would be necessary for the patient to return to his old medical attendant as soon as he came back. It has been urged that no doctor has a proprietary right in regard to his patients, but in this emergency, the arrangement was a matter of honour. The war has been prolonged beyond expectation, and it is by no means over yet. Men have gone and some have returned. Others have taken their places, and yet others will be called upon to serve in France and elsewhere in the future. As long as this dire need exists of serving the country against a powerful and unscrupulous foe, who must be completely vanquished, so long will the practitioners who stay at home to minister to the medical needs of the civil community be required to safeguard the interests of their absent colleagues. Some men on their return from the front have discovered that the compact has not been strictly kept. An elastic conscience has permitted a few practitioners to retain the patients of their colleagues. Various excuses have been put forward. It has been said that the patient did not wish to return to their previous medical adviser; that the doctor at home did not know that the patient had been under the care of the absent man before his departure, and so forth. None of these excuses are valid. They indicate that the practitioners did not recognize the trust that had been placed in them. We would urge on all practitioners that neither pecuniary nor other considerations should weigh with them when dealing with persons who have been the patients of men serving with the forces abroad. There should be no difficulty in discovering whether a new patient was previously under the care of a practitioner who has gone to the front or not. A little goodwill and a few unambiguous words will suffice to impress upon the patient that the doctor has a duty to perform to his absent colleague. It may be necessary to repeat this warning to the patient from time to time, in order that there may be no misunderstanding. When the practitioner returns, his colleague, who has looked after his patients during his absence, should seek an early opportunity of discussing matters with him quite frankly and without reserve. An arrangement could easily be devised, should a patient announce his intention of consulting a third practitioner rather than return to the original man, without any breach of faith or underhand dealings. When it is remembered that the principle involved obtains in ordinary conditions of practice and forms a fundamental dogma in medical ethics, it must be conceded that no practitioner should retain the patient of another practitioner. The necessity for entrusting patients to the men who remain in Australia, and the desire to show our heartfelt gratitude to those men who offer their services to our country, constitute additional reasons for acting on this principle.

THE TREATMENT OF DIABETES.

The management of the diabetic patient still proceeds upon empirical lines. The pathological conditions giving rise to the disease are little known. Glucose appears in excess in the blood. It is derived sometimes from carbohydrates in the food and sometimes from proteins present in the tissues of the body or ingested as food. No satisfactory reason has been demonstrated for the failure of the oxidation of glucose in the tissues. Some physicians deprive their patients of starches and sugars in the diet. Sometimes these patients on strict diet keep well, accumulate little glucose in the blood, with a small allowance of carbohydrate in their meals, and maintain a fair degree of health for years. William

H. Hurtley[1] has made a careful and accurate study of the diet and urine of seven patients. His patients were unable to live without a moderate supply of carbohydrates. He found that restricted amounts of carbohydrates led, in his patients, to increased excretion of β-oxybutyric acid. He cites the case of a woman who excreted 34 gm. of β-oxybutyric acid daily when the carbohydrate in the diet was reduced from 180 gm. to 70 gm. daily in five days. Despite attempts to find a suitable diet and the administration of sodium carbonate, this patient, who had not previously been excreting the four carbon atom acids, continued to excrete β-oxybutyric acid for several months, until coma supervened. Further experience convinced Hurtley that diabetic patients of this type require a certain amount of carbohydrate in their food.

Hurtley employed diets rich in proteins and fats and poor in carbohydrate. With these diets he was unable to check the formation of β-oxybutyric acid, which he estimated each day. When he increased the amount of sugars and starches in his diets he was able to regulate and diminish the excretion of organic acids. Among the attempts that he made to assist the oxidation of glucose, the administration of hexose-phosphates may be noted. Arthur Harden discovered that glucose is combined with phosphates as a preliminary to its splitting into alcohol and carbon dioxide by the yeast plant. Without the presence of phosphates this decomposition does not occur. It seems as if the rate of this reaction is dependent on the amount of phosphates available. The administration of the sodium salt of hexose-phosphoric acid leads to a diminution in the excretion of sugar and β-oxybutyric acid. The dose of this substance has been small, so that the amount of sugar added to the diet in this form has been insignificant. The patient was a medical man who had a daily excretion of about 100 gm. glucose. Without any alteration in the diet the sugar excreted diminished after the use of hexose phosphates to about 60 gm. daily. The addition of 57 gm. potatoes had no effect in lessening the improved secretion of glucose. Half the potatoes were replaced by 156 gm. apples, but the glucose excreted was not increased. In addition, the quantity of β-oxybutyric acid in the urine steadily fell until, after six weeks, the excretion of β-oxybutyric acid had diminished from 20 gm. to 4 gm. daily.

Hurtley also gave sodium carbonate to his patients *per orem*, while he estimated the daily yield of organic acids. He was unable to establish any influence on the quantity of β-oxybutyric acid excreted. He points out that the continued administration of sodium will provoke the excretion of potassium and other basic substances from the body. He suggests that, in future, mixtures of the bases sodium, potassium and calcium, balanced according to the proportions of these bases in the body, be employed instead of pure sodium carbonate. Hurtley was not able to observe any improvement in the patients when comatose after he had given them intravenous injections of sodium carbonate. He contrasts this failure with the immediate and rapid improvement noted in undoubted acidosis after the administration of a base.

Another line of treatment, different from that examined by Hurtley, has been developed by Guelpas and Allen. In the issue of this journal dated October 28, 1916, Dr. J. F. Wilkinson gave some account of his successful results, which had raised new hopes in his mind. The diabetic patients are deprived of food until the urine is free from sugar, when they are placed on a mixed diet poor in carbohydrates. The patients are starved for one to three days periodically if the sugar reappears in the urine. Dr. Wilkinson also states that starvation seems the best treatment for coma, and that there is no danger from starving a patient in the incipient stages of coma. Further experience of this treatment will be looked for with interest. It may be hoped that some careful, competent and critical investigator, such as W. H. Hurtley, will make a study of some patients undergoing this treatment during some months.

[1] *Quarterly Journal of Medicine*, Vol. IX, p. 301, July, 1916.

INTERMEDIARY HOSPITALS.

The provision of appropriate medical attendance for the whole community has ever been a problem fraught with difficulties and not a few dangers. From the earliest times the indigent poor have aroused the compassion of the populace, and especially of the Churches, and charity has asserted its right to establish and maintain hospices for their care during sickness. The rich have had little difficulty in obtaining treatment when it became necessary. But by far the worst-placed section of society is that which lies between the poor and the rich. In order to meet the requirements of this large mass of persons, various drastic proposals have been put forward, and each has met with strong opposition, because none was quite just to all the members of this vast class. Mr. G. A. Syme has attacked the problem from an eminently sensible point of view, but he has not met with the approval of some of the advocates of equality. The problem Mr. Syme found himself faced with was that the hospitals in the Commonwealth suffered from inadequate incomes and increasing expenditures. He held that, while hospitals were supported largely by voluntary subscriptions, and while the members of the honorary staffs gave their services gratuitously, only those who could not afford to pay should receive admission. This means that persons who can afford to pay something, but whose means are insufficient to discharge the account of private practitioners, should go elsewhere. He suggested the intermediary hospital for this large class of unprovided-for persons. While Mr. Syme urged this means of supplying a long-felt want, the Local Government Association of New South Wales has been discussing with the Minister of Public Health a scheme of the municipalization of hospitals.

It is unreasonable for people to object to the exclusion from the public hospitals of patients who can pay something, on the ground that this distinction brands the hospital inmates with the stamp of pau-

perism. The fact that the charitable support the public hospitals by voluntary donations and contributions renders them charitable institutions. We therefore plead with Mr. Syme for the more rigid exclusion from public hospitals of persons able to pay, in order that those for whom these places exist may have the full benefit. The intermediary hospital is more difficult to establish and to maintain. It has not been made self-supporting in any part of the world, as far as we are aware. But the difficulty is not insurmountable, and comparatively small endowments are usually required to place it on a sound foundation. It is a better solution of the problem than the destruction of the charitable basis of our great public hospitals.

MORE ACCOMMODATION NEEDED.

The medical profession is recruited in the Commonwealth from two principal sources. Firstly, the Universities of Adelaide, Melbourne and Sydney provide suitable courses of instruction for the young men and women, born or resident in Australia, who are desirous of becoming practitioners of medicine. These Universities grant degrees which are accepted by the Medical Boards instituted by the several States to register those legally qualified to essay the cure of the sick. Secondly, graduates in medicine of British Universities and those possessed of the licentiate, membership or fellowship of certain professional corporations emigrate to Australia to practice under the same conditions as those educated in the Commonwealth. The proportion of doctors derived from each of these sources in the last few years before the calamitous outbreak of war was roughly equal. In New South Wales, which possesses the largest medical school, the number of medical men from overseas who were registered in the State during the five years preceding August, 1914, was slightly in excess of that of men educated in the State. Since the commencement of war the medical graduates, with few exceptions, have left Australia to serve in the Australian or Royal Army Medical Corps.

At a meeting of the Faculty of Medicine of the University of Sydney, Surgeon-General Fetherston, Director-General of Medical Services, asked the University of Sydney to supply, as early as possible, more medical graduates for national service with the Australian Imperial Forces. The Defence Department will need every medical student who completes his medical course during the next few years. Fortunately, a large number of students, the majority of whom are under age as regards active service, are entering the medical school. These students, sons and daughters of our citizens, born and bred, in most cases, in this land, are desirous of acquiring a competent knowledge of medicine, so that they may heal their kith and kin. The size of the class-rooms in the Medical School will, however, limit the number that can be taught. Practical laboratory instruction is recognized as essential to the efficient training of the medical student. The laboratories in certain departments are already overtaxed in regard to numbers. Some of the rooms, specially fitted for technical purposes, are in continuous use during the week. Class follows class throughout the day. Attendants, working overtime at night, prepare the rooms for the early morning class. The Senate of the University has provided a sufficiency of teachers and attendants, although these would work more economically if a greater number of class-rooms were provided. As the position stands now, it will be impossible to train a greater number of students than at present. Yet the University of Sydney trains no more than half of those who register each year as medical men within the boundaries of New South Wales. Surely the youth of this State should not find difficulty in obtaining a proper training without leaving their native country. The Sydney Medical School is now almost self-supporting as far as its annual expenditure is concerned. The fees charged the students cover the cost of staff and maintenance. Little of the sum spent on higher technical or professional education is spent on the medical student. The Medical School may appear to be lodged in a commodious building of ample size, but it should be recollected that a medical school is a complicated organization of many departments, and that rooms designed and equipped for one purpose cannot always be utilized for another. The cost of buildings and accommodation must at present fall on the State, and surely the care of the health of the people by Australia's sons and daughters deserves consideration.

THE INSANE AND MENTAL DEFECTIVES IN SOUTH AUSTRALIA.

The annual report of the Inspector-General of Hospitals dealing with the Mental Hospital at Parkside and with the certified mental defectives, together with the report of the Mental Defectives Board, has been issued in September of this year. The reports cover the period of the year 1915.

The Inspector-General draws attention to the urgent necessity of increasing the accommodation at Parkside and advocates that the nucleus of a new institution should be created without delay. The present Hospital is overcrowded, and, as he points out, the laundry is antiquated and not properly equipped. He states that the urgent work of improving the existing accommodation has not been put in hand up to the present, on account of the bad season and the convulsion through which the country has been passing owing to the war. We would go considerably further than the Inspector-General by pointing out that no Government has any right to subject the insane to conditions which render the effectual carrying out of modern forms of treatment quite impossible. The older parts of the Hospital, although structurally and architecturally good in parts, would have to be entirely remodelled to meet the requirements of modern psychiatry. A few of the wards are passable; many of them could not be transformed into suitable wards. The laundry, the kitchens, the administrative department and the stores should not be allowed to stand one day, and should be replaced in accordance with the necessities of a modern institution. Of the newer parts of the building, little can be said in praise. From an æsthetic point of view, red bricks and corrugated iron do not harmonize with stone and tiles. The architect would be well advised if he would allow himself to be guided by psychiatric experts in the planning of the various departments, instead of forcing on them structures which are neither pleasing nor useful. In particular he should be impressed with the fact that the nurses' sleeping-quarters should be situated as far away as possible from the wards which accommodate persons suffering from acute mania and other noisy forms of insanity,

and that economy in administration can only be achieved when the various departments are placed in proper relation to one another. It appears to us to be intolerable that the unfortunate inmates of a mental hospital should be made to suffer on account of the peculiar ideas of the architects.

The Inspector-General calls attention to the fact that the cost per head of population for the maintenance of the insane of the five other States for the year 1915 varied from 3s. 0.3d. (New South Wales) to 3s. 11.7d. (Tasmania). In South Australia, the Government is attempting to maintain its insane on a sum of money equivalent to 1. 9.1d. per head of population. The insane and the mentally deficient have a claim on the community, and a sufficient sum of money should be expended on their comfort and on the treatment of their conditions. Another defect in the institution as it is planned is noted by the Inspector-General. A considerable number of children under the age of 18 years are inmates of this institution. No special or separate accommodation is available. It would certainly be in the interests of these children if a proper educational establishment were provided. In a similar manner a sharper differentiation between senility and insanity should be made and other accommodation found for the senile.

The Inspector-General advocates the admission of returned soldiers suffering from mental breakdown into a special department without certification. It is obviously desirable to postpone certification of returned soldiers as long as possible, and in the meantime to provide skilled treatment on modern lines and with a favourable environment. A second suggestion which we have endorsed on several occasions is that an out-patient mental clinic should be established at the General Hospital. Dr. Morris proposed that this psychiatric clinic should be worked in conjunction with the receiving wards at the Adelaide Hospital.

From the tables it appears that 264 persons were admitted into the Hospital on new certificates, and 16 were admitted as "returned from trial." There were 1,080 persons in the Hospital on December 31, 1914, bringing the total for the year to 1,360. Eighty-nine of the patients died during the year, and 133 were discharged. Nine patients escaped, but 8 were recaptured. Of the discharged, 129 "recovered," while 4 were "not improved." The number of patients admitted in any one year has increased in the course of 55 years from 68 to 280. The percentage of recoveries, calculated on the number of persons admitted, was 46.4. Since the institution has been opened, 10,788 persons have been admitted, and of these 54.9% have been discharged "recovered." The death-rate, calculated on the number of patients resident in the hospital, was 8%. The death-rate has varied irregularly during the past 55 years. It was lowest in 1867 (5.2%) and highest in 1903 (12.8%). The percentage for the whole period was 9.3.

A table is published giving the ratio of certified mental defectives to the general population. In South Australia there were in 1915 2.59 insane to every 1,000 of population. From 1877 to 1894 the proportion was lower, having varied between 2.01 and 2.53 per 1,000. Since 1895 the variations have been small, and in the majority of these years the figure has been just below 2.6. In England, the ratio has increased between 1877 and 1912 from 2.69 to 3.75. In Western Australia the ratio in 1915 was 3.17. In this State the incidence of insanity has apparently increased steadily from 1894. In New South Wales the ratio of insane to general population in 1915 was as 3.79: 1,000. Here too the ratio has increased almost uniformly. In Queensland there were 3.58 insane persons to every 1,000 of population in 1905. In 1877 the figure was 2.05, while 3 was reached in 1894. In Victoria, 4.13 per 1,000 of the population were insane in 1915. In 1877 the ratio was 3.15 per 1,000. It will thus be seen that the relative frequency of insanity is lower in South Australia than elsewhere in the Commonwealth, and also that the rate of increase is less regular and slower.

Of the 264 persons admitted during the year 1915 128 were suffering from a first attack of mental disorder and 96 from a subsequent attack. In 24 cases it is unknown whether the attack was a first attack or not. In 16 cases the disorder was congenital. In 69 the duration of the present attack was less than three weeks. In 36 it was over two and less than four weeks, in 51 it was between one and three months, in 14 between three and six months, in 10 it was between six and nine month and in 3 it was between nine and twelve. The attack had lasted between one and two years in 13, between two and three years in 8 and more than three years in 17.

There were 37 cases of acute mania, of which 12 were first attacks. The total number of mania cases was 52, of which 18 were alcoholic, 6 were senile and 1 chronic. There were 32 cases of acute melancholia, of which 19 were first attacks. The total number of melancholia cases was 50, including 6 sub-acute, 2 chronic, 8 senile, and 2 alcoholic. There were 8 cases of melancholic stupor, 4 of katatonic stupor, and 1 each of anergic and post-maniacal. Among the 45 dementia cases there were 29 of the senile type, of which 15 were first attacks, 7 of the organic type, 4 secondary dementias, 3 epileptic and 2 alcoholic dementias. There were 16 cases of hebephrenic dementia precox and 7 cases of the paranoic form. There were 11 cases of paranoia and 18 of non-systematized delusional insanity. There were 4 cases of general paralysis of the insane of the expansive type. Among the group idiocy and imbecility there was one with epilepsy and 13 without. There was one case of moral insanity, 5 of puerperal insanity, 2 of lactational insanity, 6 of climacteric insanity and 9 cases of epileptic insanity.

In regard to the ætiological factors of the conditions for which the patients were admitted during the year, it appears that heredity was present in 69 out of the 264 cases. In 54 of the cases a previous attack is entered as an ætiological factor. In 12 cases there was congenital deficiency, in 31 the patient was in a senile condition, in 5 she was at the climacteric period and in one the patient was at puberty. Mental stress was regarded as the principal cause in two cases only, but is entered as a contributory cause 69 times. Alcoholic appears as a contributory factor 36 times, lead as a contributory factor and as a principal factor once, febrile diseases as a principal factor twice, and venereal diseases as a principal factor once, and as a contributory factor five times. Trauma was a direct cause in three cases, and an indirect one in eight. Sexual excess appears nine times in the table, but only once as a principal factor. Nervous diseases appear 19 times, and three times as a principal cause.

As stated above, 89 inmates of the hospital died during the year. From a table setting out the primary and contributory causes of death, it appears that thoracic diseases determined the death in 30 instances, in 15 of which the affection was pulmonary and in 15 cardio-vascular. The primary cause of death was associated with diseases of the cerebro-spinal system in 25 cases ,and in 12 with diseases of the abdominal organs. In three cases the urinary apparatus was the seat of the fatal disease, in three cases the patient died of malignant disease, in one of enteric fever, in one of cellulitis, and in one of necrosis of the jaw. Senile decay was entered eight times, and "other general diseases" five times.

The Inspector-General, in his report of the Mental Defectives Board for the year 1915, gives an account of the farming operations and their value as a source of revenue. The largest item of income is that derived from patients' fees. This amounts to £9,746, which is £3,312 more than the amount received in 1914. The sale of pigs yielded £232, while in 1914 there was no return from this source. The sale of fat produced £145. The total revenue amounted to £10,277, as compared with £6,964 for 1914. The increase is definitely due to the great care expended on farming operations, which are being developed as a therapeutic agent. In connexion with this work, the grounds of the hospital are receiving attention. Several large trees, which deprived the buildings of air and light, have been removed, and the necessary steps have been taken to prevent the deposition of rubbish over the walls and fences. Suitable garden work has also been carried out. The Inspector-General calls attention to the need of better protection of the inmates of the institution in the event of an outbreak of fire.

AN EASY AND QUICK METHOD OF LOCATING NEEDLES AND FOREIGN BODIES IN THE HAND.

Dr. A. Reginald McLeod writes:—

Put the patient in a dark room and place a small electric torch (the 2s. variety) under and against the palm or fingers, and the foreign body is at once visible and a great deal of worry and time is saved.

Abstracts from Current Medical Literature.

SURGERY.

(160) Splenectomy in Splenic Anæmia, Hæmolytic Icterus and Hanot's Cirrhosis.

In the *Journal of the American Medical Association*, September 2, 1916, Joseph L. Miller states that the value of splenectomy in splenic anæmia remains unquestioned, and since the first report by Banti, in 1894, sufficient time has elapsed to allow conclusions to be drawn as to the immediate success and the permanency of the results. In recent years two other conditions, clinically resembling splenic anæmia, have been relieved and probably permanently cured by splenectomy, namely, hæmolytic icterus and the hepatic cirrhosis of Hanot. These three conditions have many things in common, and have, no doubt, in the past, been frequently confused. In all there is a marked enlargement of the spleen, although the literature contains a few reports of apparently true hæmolytic icterus without palpable splenic tumour. In all three there is chronic anæmia, or chronic icterus, or both. While typical hæmolytic crises occur in only hæmolytic icterus, sudden, unaccountable increase in the anæmia is not infrequent in Banti's disease. Hæmolytic icterus often occurs in several members of a family, and may be definitely hereditary, and though familial cases of splenic anæmia are less frequent, they nevertheless do occur. Chronic jaundice is constantly present in hæmolytic icterus and Hanot's cirrhosis, but is infrequent in splenic anæmia. In hæmolytic icterus bilirubin is usually present in the blood, but there is no urobilin, while in the urine bilirubin is absent, except during crises, but urobilin is present. This peculiar condition is not present in either of the other two diseases. Secondary anæmia is not present in Hanot's cirrhosis, but it is characteristic of the other two conditions. The author states that the majority of modern writers question whether we have in splenic anæmia a disease entity. It is quite probable that hæmolytic icterus has been diagnosed in the past as splenic anæmia, and in children splenomegaly from syphilis, with anæmia, may also be included, at least clinically, as splenic anæmia. Curschmann reports the case of a patient with a history of hereditary syphilis, who clinically had splenic anæmia, recovery occurring after salvarsan. The results of operative treatment in the early stages of splenic anæmia are excellent, and Griffin's report of five cases from the Mayo clinic, is quoted, three with cirrhosis and ascites, and two in the pre-ascitic stage, on whom splenectomy was performed. Four of the five returned to normal health. Some have advised against operation during the ascitic stage, but the literature contains several reports in addition to those of the Mayo clinic, where the ascites disappeared and the patient was cured by splenectomy. As operation is the only means that offers hope of cure, it should be undertaken providing that the patient's condition is not such to make recovery improbable from the operation. In hæmolytic icterus, as a rule, the patient is little inconvenienced by his trouble, but in the crises the degree of anæmia may be so great as to incapacitate the patient temporarily. When considering the advisability of splenectomy the degree of inconvenience caused by the anæmia should be considered, as the operation is attended with a certain amount of danger, and should not be undertaken without definite indications. Splenectomy, however, is undoubtedly curative in hæmolytic icterus.

True Hanot's cirrhosis is a rare disease. Like splenic anæmia mistaken diagnoses are probably frequent. It bears some resemblance to splenic anæmia and hæmolytic icterus. For this reason it is not surprising that cure should follow splenectomy. The author has only been able to find three cases reported of this condition as cured by operation, and he believes that in Hanot's cirrhosis, a condition hitherto considered incurable, splenectomy is indicated.

(161) Inguinal Hernia; Hernia of the Bladder.

D. H. P. Wilkie (*Journ. Royal Naval Medical Service*, July, 1916) has written a paper on inguinal hernia, with especial reference to hernia of the bladder and recurrent inguinal hernia. He states that the national requirements for fit men induce not only many of the subjects of hernia, who would otherwise refuse radical treatment, to submit to operation, but in addition many of those whom previous operation failed to cure, present themselves for further treatment. In four months he operated on 135 cases of inguinal hernia, and on these he bases his observations. Amongst these cases were 93 cases of oblique and 42 of direct inguinal hernia. In five of the oblique hernia there was an undescended testicle as well, and in all of these it was possible, after dividing the vascular pedicle, to bring the testicle into the scrotum. The feature of interest in the oblique hernia was the number of cases (fifteen) showing an hour-glass constriction of the sac. When such a constriction occurs high up it is apt to be mistaken for a narrow internal abdominal ring, and chosen as the site for ligature of the sac. If this is done a narrow peritoneal pouch is left behind, and recurrence will follow. In direct hernia the type most frequently met with was that in which a weakened conjoined tendon is thinned out and stretched by the protrusion of a peritoneal sac, between the deep epigastric vessels and the obliterated hypogastric artery. In several of these cases the obliterated hypogastric was carried forward on the side of the sac, and showed as a thick fibrous band. The second type of direct inguinal hernia was that in which a sac, usually preceded by a small lipoma, has herniated through a hole in the conjoined tendon. The third type, of which fourteen cases were met in the series, is that in which the inguinal canal is very thin, and is represented by the intercolumnar fibres stretching between the two pillars of the external oblique, which are separated from each other as high as the internal ring. When the anterior wall is divided the hernia is found to consist of a diffuse peritoneal bulging over the whole posterior wall of the canal. Hernia of the bladder was met with in 16% in this series. A special lookout should be kept for the bladder in all hernia operations, for if it is present and is not recognized complications may be expected. Three varieties of hernia of the bladder are described, and in 42 cases of direct inguinal hernia operated on the bladder was present in the wall of the sac in 21, while in 93 cases of oblique inguinal hernia it was only found in one instance. In the series of cases reviewed there were 21 cases of recurrent hernia, one of which had been operated on on seven previous occasions. The majority of these recurring cases indicated that they are due to an inadequate primary operation. Thus there were some cases where a long congenital sac had not been identified and treated at the first operation, while in others the sac had not been completely removed, having evidently been tied at an hour-glass contraction. In others the suture material had been absorbed before proper consolidation had taken place. The author considers that in writings on hernia sufficient emphasis has not been laid on the not infrequent presence of two or more sacs on one side, and he quotes instances of this class of case in his own practice. The most important variety of double sac, because it is the one most likely to be overlooked, is the co-existence of an oblique direct sac. The operator is strongly advised to look for a direct sac after he has removed a typical congenital sac. A brief summary on the points of the operation which appear to be essential is given.

(162) Rhabdomyoma of the Prostate.

Bentley Squier (*Surg. Gynec. and Obstet.*, September, 1916) reports on a case of rhabdomyoma of the prostate. The author states that the number of reported cases of sarcomata of the prostate gland which have been microscopically examined and well authenticated is very small, and the number of rhabdomyomata smaller. Kaufman reports only three cases, and the histories and pathological findings in these three cases are quoted in full. The writer's own case occurred in a man of 40 years, who had suffered from a painless hæmaturia for three months before examination. On examination by the rectum the prostate

was felt to be as large as a hen's egg and of flinty hardness. No periprostatic infiltration could be appreciated. Cystoscopic examination showed marked trabeculation of the bladder wall. There was no residual urine. The prostate, bladder neck and seminal vesicles were removed by the perineal route, and an anastomosis made between the bladder neck and the urethra, over a permanent catheter. Union was complete on the thirteenth day, and there was no incontinence. Two months after operation recurrence took place in the perineal scar, and rapid extension into the rectum followed. The macroscopic and microscopic appearances of the removed mass are given.

(163) Shrapnel Wound of the Posterior Wall of the Pericardium.

R. Scot Skirving (*British Journ. Surgery*, July, 1916) describes the removal of a missile from the posterior wall of the pericardium. The patient, æt. 22, was wounded on October 11, 1915. He was hit in the left axilla, and the missile travelled obliquely through his lung; there was no wound of exit. The author saw him first on February 7, 1916. His main symptoms were shortness of breath and deep-seated pain in the chest. A full description of his physical examination is given, as is also the results of the X-ray examination. The final deduction from these examinations was that a piece of metal was lying partly within and partly without the pericardial sac. The patient was submitted to operation on March 21, 1916, and the procedure is described in full. The missile was delivered without any considerable hæmorrhage. The patient recovered well from the anæsthetic, and the after-history was uneventful. The author is under no delusions about the future of this patient, and does not think that because the piece of metal was removed that the patient's disabilities will disappear. The chest pain will probably be relieved, but some permanent "hobbling" of the heart is expected as the result of reformation and permanent establishment of pericardial adhesions. There is also the possibility that some of the great vessels against which the foreign body lay pressed may have the integrity of their walls damaged, and some sort of aneurysmal change develope.

GYNÆCOLOGY AND OBSTETRICS.

(164) Uterine Hæmorrhage.

Frank (*Surg. Gynec. and Obstet.*, September, 1916) advocates the use of X-rays in the treatment of uterine hæmorrhage. He admits the diversity of opinion on the subject, but considers that, when properly employed in selected cases, the treatment is invaluable and indispensable in gynæcology. Uterine hæmorrhage is affected indirectly by X-rays in virtue of their influence upon the ovaries. Hæmorrhages, the result of normal or abnormal ovarian influences, are affected by the inhibition of follicle ripening and ovulation. Ripe and partly ripened follicles are very susceptible, while the primordial follicles are extremely resistant even to massive and prolonged exposure. If all ova are destroyed, permanent amenorrhœa results; if all ripe and ripening follicles are killed, menstruation ceases until some primordial follicles have had time to ripen and rupture. In addition to the control of uterine hæmorrhage, X-rays have a direct effect on the growth of fibromyomata. The technique consists in fractional and intensive treatment by X-rays; the former is used when the reduction of hæmorrhage and not amenorrhœa is desired, and the latter method is used in cases in which profuse bleeding must be controlled within a short period of time. According to the author, X-ray therapy is applicable in:—(1) functional menorrhagia and metrorrhagia of adolescence; (2) functional menorrhagia and metrorrhagia during sexual maturity; (3) functional menorrhagia and metrorrhagia preceding the climacterium; (4) menorrhagia and metrorrhagia due to fibromyomata. Adolescent hæmorrhages which have resisted all other forms of therapy should alone be selected for this treatment. Functional hæmorrhages during sexual maturity should only be treated after carcinoma has been excluded. Likewise the possibility of malignancy in the preclimacteric functional hæmorrhages should be carefully guarded against before resorting to this method. In selecting cases of uterine fibroids for treatment all complicated cases should be excluded. This method of treating fibroids is particularly useful in patients with serious heart lesions, nephritis, pulmonary trouble, and those of a hyperneurotic temperament. His final conclusions are, firstly, that X-rays in gynæcology has proved an invaluable addition to treatment by enabling the gynæcologist to exert graded effects upon the ovary, and thus control the menstrual cycle in degrees varying from slight inhibition to permanent destruction of function, and to diminish or cause to disappear uncomplicated cases of fibroid tumours of uterus; and, secondly, that the main danger to be apprehended is their application by error to malignant tumours.

(165) Rupture of the Bladder During the Puerperium.

F. M. Huxley records the case of a primipara, aged 26 years, who was delivered by means of forceps on account of a delay in labour due to an occipito-posterior presentation. The nurse was told to pass a catheter before the forceps were applied, but considered this unnecessary because the patient micturated spontaneously (*Proc. Royal Soc. of Med.*, Obstet. and Gynæc. Section, March, 1916). The puerperium was uneventful until the ninth day, when, on making a sudden stretching movement of the right arm, the patient was attacked by severe pain, vomiting and collapse. She was admitted into hospital with a temperature of 39° C. and a running pulse. The abdomen was distended, but neither rigid nor tender. There was dulness over the symphysis pubis and in the flanks. No urine had been passed for 30 hours. A catheter withdrew 1,200 c.cm. of acid, somewhat offensive urine. On the following morning over a litre was again withdrawn. The patient died on the same day. The post-mortem examination revealed adhesions between the bladder and anterior abdominal wall, and between the posterior part of the bladder and the anterior surface of the uterus. The whole bladder wall was very thin, and had obviously been distended recently. A horizontal slit, some 5¼ cm. in length, was discovered at the summit of the fundus. There were no signs of sloughing or bruising. The author has little doubt but that the rupture was spontaneous, and took place on the ninth day after the birth. He suggests that the forceps were applied to the fœtal head when the bladder was distended, and produced atomy of the bladder. The state of distension was never overcome, and the sudden strong contraction of the abdominal muscles was sufficient to produce rupture of the thin bladder wall.

(166) Syphilis of the Uterus.

Norris (*Surg. Gynec. and Obstet.*, September, 1916) discusses at length syphilis of the body of the uterus, exclusive of lesions of the cervix. He asserts that it is only since the discovery of the *spirochæta pallida* in 1905, and the development of the Wassermann test two years later, that the true frequency of this form of infection has become recognized. He admits the possibility of the primary sore occurring within the body of the uterus. He cites a case of gummatous endometritis, but is of opinion that a more common form of syphilitic endometritis manifests itself by changes in the glands and stroma, and is characterized by changes in the blood vessel walls and condensation of the stroma. He maintains that ulceration with resulting scars is not infrequent in the tertiary stage, and that the underlying musculature is usually more or less involved. Lesion of the myometrium which occasionally occur may be divided into (1) a diffuse metritis, and (2) gummata. In the former the chief changes are localized in the blood vessels. The symptoms and signs vary with the character of the lesion, but are very indefinite. The main signs are menorrhagia and a positive Wassermann reaction. On bimanual examination the characteristics of chronic endometritis are often detected. Leucorrhœa is not uncommon. Pain, dyspareunia and other symptoms frequently met with in non-syphilitic metritis have been noted. Marked softening of the uterus has been recorded by several observers. He concludes by quoting in detail a case of syphilis of the body of the uterus.

British Medical Association News.

MEDICO-POLITICAL.

A meeting of the Council of the Victorian Branch was held on October 2, 1916, at the Medical Society Hall, East Melbourne, Dr. A. V. M. Anderson, the President, in the Chair. The meeting had been called to consider the position of the *Venereal Diseases Bill*, which had passed its third reading in the Legislative Assembly, and had reached the Committee stage in the Legislative Council.

The Council decided that a deputation should wait on the Minister of Public Health for the purpose of asking him to introduce certain amendments:—

(i.) That a fee should be paid for notification.

(ii.) That the provisions of the *Charities Act* should apply to those cases in which persons were to be treated at State-aided hospitals; that is that they should make a declaration that they were indigent, or that they were not in a position to pay full fees to outside practitioners.

(iii.) That the list of drugs that a registered pharmaceutical chemist would be allowed to offer for sale under Section 5 should be compiled by representatives of the Victorian Branch of the British Medical Association and of the Pharmaceutical Association in conference.

(iv.) That Section 1, Sub-sections (*g*) and (*h*) be deleted, and that the Governor-in-Council should not be empowered to fix by regulation the fees payable for the treatment of all patients nor those payable for clinical or other examinations.

Dr. F. L. Davies was appointed Honorary Assistant Secretary of the Branch, and Surgeon-General Fetherston was appointed a member of the Council.

A meeting of the Council of the Victorian Branch was held at the Medical Society Hall, East Melbourne, on October 12, 1916, Dr. A. V. M. Anderson, the President, in the chair.

It was reported that the members deputed to wait on the Minister of Public Health for the purpose of discussing the proposed amendments to the clauses of the *Venereal Diseases Bill*, 1916, had been received by the Minister, and that he had promised to give favourable consideration to all the requests put before him.

Representatives of the Branch had had an interview with the Minister of Public Health for the purpose of discussing the question of the notification of infectious diseases (see *The Medical Journal of Australia*, October 14, 1916, p. 329.). It was pointed out to the Minister that, although legally qualified medical practitioners were required by law to notify cases of certain infective diseases, unqualified persons could treat these cases, and were under no legal obligation to notify them. This entailed a great danger to the health of the community. Instances were given in which a patient suffering from diphtheria travelled by public tramcar to and from the residence of an unqualified practitioner up to the time of her death. In a second case, the patient, a child, was vending sweetmeats to other children; no legal action could be taken to prevent it. The Minister was urged to introduce an amendment of the *Health Act* which would provide that only legally qualified medical practitioners be allowed to treat cases of notifiable infective diseases. This provision had been embodied in the *Venereal Diseases Bill*. The Minister informed the members of the deputation that he was not inclined to regard this suggestion favourably, but that he would support a proposal which would have the effect of restricting unqualified practice.

On the recommendation of the Ethical Committee the Council resolved that a notice be sent to members, pointing out that, whenever the Council became cognizant of the fact that the name of a practitioner had appeared in the lay press in connexion with attendance upon patients, a letter would be addressed to the practitioner requesting him to communicate with the Editor of the paper in order that his name should not be published in this connexion in any future issue.

It was announced that the Association of Friendly Societies had agreed to the suggestion of the Council to introduce uniform medical certificates. The certificates had been printed in book form, and were ready for distribution. Lodge medical officers would shortly receive notices asking them to inform the printer how many books they would require and the required number would be despatched to them free of cost.

The President was authorized to affix his signature to a letter which was being sent by the Royal Victorian Trained Nurses' Association, protesting against the provisions included in the Bill whereby the registration of nurses would be under the control of the Midwives' Board, a purely departmental body without any representation of the medical or nursing professions. The Board would be called upon to determine the conditions and qualifications in virtue of which nurses would be entitled to registration. It was suggested that a deputation consisting of representatives of the Victorian Branch of the British Medical Association and of the Royal Victorian Trained Nurses' Association should wait on the Chief Secretary for the purpose of pointing out the anomaly of the position.

The following were elected members of the Branch:—

Dr. Gordon Ochiltree Robertson, Alfred Hospital.
Dr. Siegmund Fabl, St. Vincent's Hospital.
Dr. John Whyte Grieve, St. Vincent's Hospital.
Dr. Glenloth Victor Hickey, St. Vincent's Hospital.
Dr. Charles Ellis Jelbart, St. Vincent's Hospital.
Dr. George Henty Wickens, Albert Park.
Dr. Arthur Edward Brown, Colac.
Dr. Francis George Travers Champion de Crespigny, Melbourne Hospital.
Dr. Frederic Hobart James, Melbourne Hospital.
Dr. Harold Crawford, Melbourne Hospital.
Dr. Isabella Ada Phillips, Melbourne Hospital.
Dr. Edward Francis Praagst, Melbourne Hospital.
Dr. Frederick Grantley Morgan, Melbourne Hospital.
Dr. Stewart Osburn Cowen, Kew.
Dr. Florence May Cooper, Canterbury.

A meeting of the Council of the Victorian Branch was held at the Medical Society Hall, East Melbourne, on October 25, 1916, Dr. A. V. M. Anderson, the President, in the chair.

It was decided that a further attempt should be made to diminish or prevent unqualified practice. The Council determined to cause enquiries to be made from the other Branches for the purpose of ascertaining what steps had been adopted in the various States. It was held that great harm was being done, and that the public health was gravely affected by the fact that infectious diseases were being treated in Victoria by so-called herbalists, who were not compelled to notify these cases, as medical practitioners were.

The Council considered the advisability of establishing a policy in regard to a lodge patient having his name on the lists of two or more doctors. It was ascertained that this practice was a common one, and that exception had been taken to it on several occasions. The Council resolved that there was no cause for interference on its part when a lodge patient enters his name on the lists of more than one doctor, provided that the accepted rules governing medical practice were not interfered with.

Communications from several medical men in regard to the examination of recruits were considered. It was stated that these men had been engaged to carry out the work on a certain scale of fees. When their accounts were submitted, the fees were reduced by more than 50%, and the maximum allowed to any one practitioner was £2 2s. Representations had been made to the Defence Department, and the following reply has been received:—

> Dr. ..... will receive payment at the rate of £1 2s. 6d. for every day of three hours and over, and 11s. 3d. for every day under three hours, as this officer must hold a commission in the A.A.M.C. Reserve (being under 35 years). Civilian medical practitioners will receive 2s. 6d. per day per head for the first five, and 1s. per day per head for all over five examined, without any maximum being fixed.

The Council was informed that the work in other cases had been paid on this basis. The attention of the Principal

Medical Officer had been drawn to the scale of fees adopted by the War Office in England, and published in the *Lancet* of August 5, 1916:—

> It has now been decided to settle the disputed claims referred to by the payment of 2s. 6d. a head up to 16 recruits examined, and 2s. per each recruit examined in excess of 16 in any one day.

The memorandum had been signed by the Assistant Financial Secretary, War Office, London, and dated July 29, 1916.

It was reported that a deputation of members of Ophthalmological Section of the Victorian Branch had waited on the Minister for Health for the purpose of protesting against the inclusion of certain clauses of the Opticians' Bill. It had been represented to the Minister that the Bill had received the approval of the Ophthalmological Section. This was not the case, and the Section had never been consulted. The Minister stated that he was in favour of putting down unqualified practice, and that he was opposed to any extension of facilities for sight-testing by unqualified persons. The Bill would not be considered by Parliament during the present session.

The Council also considered the proposal to lower the standard of vision tests for pilots. The new standards have been adopted by the Marine Board. After some discussion it was resolved that the matter be referred to the Ophthalmological Society, and that this Section be given power to take any action deemed necessary.

A report of the Library Committee was read. It was announced that a conference of librarians in charge of medical libraries in Victoria had been held to discuss the matter of the overlapping of medical journals and that of the compilation of a catalogue of all medical literature in the Victorian Libraries. Mr. E. La Touche Armstrong, of the Melbourne Public Library, had pointed out that overlapping had taken place for a number of years, and that a break in the continuity of the bound sets now on the shelves would be occasioned should certain journals be discontinued. He suggested that a consultation should take place between the librarians before any new periodicals were ordered. He also suggested that in order to keep the librarians cognisant of new editions or works, or of new periodicals added to a library, a list of these additions should be published quarterly in *The Medical Journal of Australia*. The cessation of any publication, or the discontinuance of taking any periodical might also be reported. It was resolved that these suggestions be acted upon in the coming year. In regard to a medical catalogue, it was considered advisable to postpone taking action in view of the fact that the Federal Bureau of Science and Industry would publish a catalogue of this nature.

It was decided to send a letter of sympathy to the widow of the late Dr. T. R. Montgomery, of Terang.

The following were elected members of the Branch:—

Dr. Alexander Allison Lang, Alfred Hospital.
Dr. Harold Rupert Hyett, Melbourne Hospital.
Dr. Wreyford Lawrence, Royal Park Camp.

The following have been elected members of the New South Wales Branch:—

Dr. Frederick Short, State Hospital, Lidcombe.
Dr. A. L'Estrange Mahon, Lewisham Hospital, Lewisham.
Dr. Sydney J. Woolnough, Blayney.

Public Health.

THE HEALTH OF VICTORIA.

The following notifications have been received by the Department of Public Health, Victoria, during the week ending October 22, 1916:—

	Metropolitan. Cs.	Dths.	Rest of State. Cs.	Dths.	Total. Cs.	Dths.
Diphtheria	78	2	29	2	107	4
Scarlatina	20	1	7	0	27	1
Enteric Fever	0	0	2	1	2	1
Pulmonary Tuberculosis	25	8	10	7	35	15
C'bro-Spinal Meningitis.	8	—	5	—	13	—

THE HEALTH OF NEW SOUTH WALES.

The following notifications have been received by the Department of Public Health, New South Wales, during the week ending October 21, 1916:—

	Metropolitan Combined District. Cs.	Dths.	Hunter River Combined District. Cs.	Dths.	Rest of State. Cs.	Dths.	Total. Cs.	Dths.
Enteric Fever	4	1	1	0	4	0	9	1
Scarlatina	38	0	3	0	11	0	52	0
Diphtheria	24	0	9	0	46	1	79	1
Cerebro - spinal Meningitis	2	2	0	0	4	3	6	5
Pulmonary Tuberculosis	24	6	3	0	—	†—	27	6
Malaria	1	0	0	0	0	0	1	0

† Notifiable only in the Metropolitan and Hunter River Districts.

INFECTIVE DISEASES IN QUEENSLAND.

The following notifications have been received by the Department of Public Health, Queensland, during the week ending October 21, 1916:—

Disease.	No. of Cases.
Scarlatina	8
Pulmonary Tuberculosis	8
Enteric Fever	6
Diphtheria	19
Varicella	28
Puerperal Fever	2
Malaria	5
Ankylostomiasis	1
Erysipelas	1

THE HEALTH OF SOUTH AUSTRALIA.

The following notifications have been received by the Central Board of Health, South Australia, during the week ending October 7, 1916:—

	Adelaide. Cs.	Dths.	Rest of State. Cs.	Dths.	Totals. Cs.	Dths.
Morbilli	25	0	131	0	151	0
Pertussis	9	1	83	1	92	2
C'bro-Spinal Meningitis	0	2	0	0	0	2
Erysipelas	4	0	25	0	29	0
Pulmonary Tuberculosis	1	1	7	3	8	4
Scarlatina	1	0	3	0	4	0
Enteric Fever	0	1	2	0	2	1

The following notifications have been received by the Central Board of Health, Adelaide, during the week ending October 14, 1916:—

	Adelaide. Cs.	Dths.	Rest of State. Cs.	Dths.	Totals. Cs.	Dths.
Morbilli	28	0	148	1	176	1
Pertussis	11	2	91	3	102	5
Diphtheria	2	2	12	2	14	4
Pulmonary Tuberculosis	5	10	5	8	10	18
Enteric Fever	2	0	5	0	7	0
Scarlatina	1	0	3	0	4	0
Erysipelas	1	0	0	0	1	0
Cerebro - spinal Meningitis	1	0	0	0	1	0
Puerperal Fever	0	0	0	1	0	1

THE HEALTH OF TASMANIA.

The following notifications have been received by the Department of Public Health, Tasmania, during the week ending October 21, 1916:—

Disease.	Hobart. Cases.	Launceston. Cases.	Country. Cases.	Whole State. Cases.
Pulmonary Tuberculosis	2	0	2	4
Diphtheria	0	3	7	10
Cerebro - spinal Meningitis	0	0	1	1
Infantile Paralysis	0	0	1	1

INFECTIVE DISEASES IN WESTERN AUSTRALIA.

The following notifications have been received by the Department of Public Health, Western Australia, during the fortnight ending October 14, 1916:—

	Metropolitan. Cases.	Rest of State. Cases.	Totals. Cases.
Enteric Fever	4	6	10
Diphtheria	12	10	22
Scarlatina	6	3	9
Pulmonary Tuberculosis	17	3	20
Erysipelas	0	1	1
Cerebro-spinal Meningitis	5	1	6

Naval and Military.

In the 238th list of casualties, the name of Captain H. F. H. Plant is included in those killed in action. We have already announced the death of this brave officer. In the 239th list, issued on October 30, 1916, it is recorded that Captain T. S. Douglas is ill in hospital. We are pleased to note that Captain S. M. O'Riordan is now convalescent, and that Captain L. Cowlishaw has returned to duty.

We learn that His Majesty The King decorated Lieutenant-Colonel E. O'Neill, New Zealand Army Medical Corps, at Buckingham Palace, on October 29, 1916, with the Distinguished Service Order.

The following has appeared in the *Commonwealth of Australia Gazette*, No. 154, under date of October 26, 1916:—

Australian Military Forces.

Appointments, Promotions, etc.

His Excellency the Governor-General, acting with the advice of the Federal Executive Council, has been pleased to approve of the following changes, etc., in connexion with the Australian Military Forces, *viz.*:—

1st Military District.

Australian Army Medical Corps—

Andrew Bernard Morris to be Captain (provisionally and temporarily). Dated 7th September, 1916.

Australian Army Medical Corps Reserve—

Louis Michael Pigott to be Honorary Captain. Dated 23rd March, 1915.

Charles Henry Cormac to be Honorary Captain. Dated 4th February, 1916.

William Thomas O'Shaughnessy to be Honorary Captain. Dated 1st July, 1916.

John Ward to be Honorary Captain. Dated 1st September, 1916.

Victor Evelyn Collins, Harvey Sylvester Walsh, Albert Alexander Parry and William Robert Page to be Honorary Captains. Dated 15th October, 1916.

Douglas Boyd Irwin to be Honorary Lieutenant. Dated 1st September, 1916.

Christopher William Hurworth and Edgar Septimus Hobson to be Honorary Lieutenants. Dated 1st October, 1916.

2nd Military District.

Australian Army Medical Corps Reserve—

John Charles White Halliday to be Honorary Major. Dated 16th July, 1916.

Sinclair Gillies to be Honorary Major. Dated 23rd March, 1916.

Walter Eli Harris to be Honorary Captain. Dated 17th October, 1915.

Charles Campbell Baxter Tyrie to be Honorary Captain. Dated 28th April, 1916.

Harold Theodore Marsh to be Honorary Captain. Dated 25th July, 1916.

Frank Sheppard Brierley to be Honorary Captain. Dated 25th August, 1916.

Hugh Miller Anderson to be Honorary Captain. Dated 28th August, 1916.

Laurance Hugh Hughes to be Honorary Captain. Dated 25th September, 1916.

Herbert William James Marks and Roy Buckingham Trindall to be Honorary Captains. Dated 5th October, 1916.

Lieutenant (provisional) L. S. Beckett is transferred from Sydney University Scouts, and to be Honorary Lieutenant. Dated 3rd March, 1916. (This cancels the notification respecting the appointment of this officer which appeared on page 1774 of *Commonwealth of Australia Gazette*, No. 100, of 10th August, 1916.)

The provisional appointment of Captain A. M. Stanton is terminated. Dated 1st August, 1916.

3rd Military District.

Australian Army Medical Corps—

Morris Jacobs and Edward Bonaventure Heffernan to be Captains (provisionally and temporarily). Dated 9th October, 1916.

Australian Army Medical Corps Reserve—

Ernest M. Robertson to be Honorary Captain. Dated 6th April, 1915.

Cecil Gordon McAdam to be Honorary Captain. Dated 20th April, 1915.

Norman Charles Barber to be Honorary Captain. Dated 31st July, 1916.

Richard Arthur Manly to be Honorary Captain. Dated 1st September, 1916.

Harold Clive Disher, Roy Lindsay Park, Albert Oscar Vincent Tymms, Robert Wreyford Lawrence, Edward Harkness, Leo Augustine Neal, Gordon Ochiltree Robertson, Esmond Shirley Joske, Horace Iles Holmes, Ambrose Hedley Dunstan, Hewlett Breton, and Frederick John Jude to be Honorary Captains. Dated 15th October, 1916.

William Archibald Eyre Graham to be Honorary Lieutenant. Dated 18th March, 1916.

Gilbert Beith McNair and Edward Harry Jenkins to be Honorary Lieutenants. Dated 31st July, 1916.

George Cornwall Nicholson, Henry William DeGruchy, Walter James Charles Morton, and Edwin Roy Bisset to be Honorary Lieutenants. Dated 22nd August, 1916.

Ernest Bedford Adamson to be Honorary Lieutenant. Dated 5th September, 1916.

Denzil Govett to be Honorary Lieutenant. Dated 3rd October, 1916.

Bruce Thomson Bell to be Honorary Lieutenant. Dated 11th October, 1916.

Ambrose John Joseph Treacey to be Honorary Lieutenant. Dated 14th October, 1916.

Honorary Captains T. E. L. Lambert and E. E. R. Sawrey to be Honorary Majors. Dated 1st September, 1916.

Lieutenants (provisional) R. H. Crisp and M. A. Stewart are transferred from the Melbourne University Rifles, and to be Honorary Captains. Dated 15th October, 1916.

4th Military District.

Australian Army Medical Corps Reserve—

William Anstey Giles to be Honorary Major. Dated 1st October, 1916.

Glen Howard Burnell, Albert Ray Southwood, Geoffrey Howard Black, Graham Stuart Shipway, Clive Britten Burden, and Nigel Basil Gresley Abbott to be Honorary Captains. Dated 7th July, 1916.

Thomas Badge Ashton, Clive Newland, Frank Mayes Wilcox, Ethelbert Edred Sargent Coombe, Matthias Erichsen, Keith McEwin, Edward Millar Steven, Harrold William Downing Stoddart, Reginald John Verco, and Harry Wyatt Wunderly to be Honorary Captains. Dated 2nd October, 1916.

John Smith Proctor to be Honorary Captain. Dated 3rd October, 1916.

Devon Parkhouse and William Clifford Sangster to be Honorary Captains. Dated 5th October, 1916.

Captain (provisionally and temporarily) F. S. Hone is transferred from Australian Army Medical Corps, and to be Honorary Major. Dated 30th September, 1916.

The notification respecting the appointment of Hampden Carr as Honorary Captain, which

appeared on page 1797 of *Commonwealth of Australia Gazette*, No. 108, of 11th September, 1915, is cancelled.

5th Military District.

Australian Army Medical Corps Reserve—

Herbert Owen Chapman, Thomas Craig Boyd, Edward Scott Humphrey, Thomas Edward Marshall, Henry Offley Irwin, George Stirling Landon, John Cuthbert, Bernard Gerald Quinlan, Henry Truman Kelsall, Arthur Waldo Connelly, Frank Leslie Pownall Sawell, Bertram Fowler Hussey, Henry Mitchell Benson, Dixie Paumier Clement, Louis Ernest Seide Gelle, Isaac George, Inman Way, Edward Ernest Moule, and Edward Campbell Pope to be Honorary Captains. Dated 15th October, 1916.

John Ashmore Thomas, John Lewis Prichard, and William Adam to be Honorary Lieutenants. Dated 1st September, 1916.

6th Military District.

Australian Army Medical Corps Reserve—

Harold Lucadou-Wells, Arthur Steward Lugadou-Wells, Leopold Alfred Lucadou-Wells, Cornelius Felix O'Shea, Herbert Weatherhead Bennett, Walter George Burton, John Bertram Cassidy, and Howard George James Drew to be Honorary Lieutenants. Dated 15th October, 1916.

District Medical War Committees.

Our attention has been called to one or two inaccuracies in the list published of the members of the District Medical War Committees. The Military Authority has kindly revised these lists for us.

No. 1 *Military District* (Queensland).

Principal Medical Officer—Lieutenant-Colonel A. M. McIntosh.
British Medical Association—Sir David Hardie, Lieutenant-Colonel G. S. Jackson.
Medical Profession—Major J. Lockhart Gibson; Major H. J. Stewart.

No. 2 *Military District* (New South Wales).

Principal Medical Officer—Colonel E. S. Stokes.
British Medical Association—Dr. R. H. Todd; Dr. Sinclair Gillies.
University—Professor Sir Thomas Anderson Stuart.
Medical Profession—Dr. S. H. MacCullock; Dr. D. Thomas.

No. 3 *Military District* (Victoria).

Principal Medical Officer—Colonel G. Cuscaden.
British Medical Association—Colonel G. A. Syme, F.R.C.S.; Lieutenant-Colonel W. R. Boyd.
University—Professor Sir Harry Allen.
Medical Profession—Major W. A. Wood; Major G. T. Howard.

No. 4 *Military District* (South Australia).

Principal Medical Officer—Lieutenant-Colonel E. A. H. Russell.
British Medical Association—Lieutenant-Colonel A. M. Cudmore; Major F. S. Hone.
University—Dr. J. C. Verco.
Medical Profession—Major B. Smeaton, Captain A. F. A. Lynch.

No. 5 *Military District* (Western Australia.)

Principal Medical Officer—Lieutenant-Colonel A. E. Randle.
British Medical Association—Dr. F. C. Merryweather; Captain C. W. T. Woods.
Medical Profession—Lieutenant-Colonel W. Trethowan; Captain A. Atkinson.

No. 6 *Military District* (Tasmania).

Principal Medical Officer—Lieutenant-Colonel D. H. E. Lines.
British Medical Association—Dr. G. H. Hogg; Dr. G. E. Clemons.
Medical Profession—Major R. G. Scott; Dr. A. E. Hayward.

Special Correspondence.

(By Our Special Correspondent.)

LONDON LETTER.

The Relationship of Science to the State.

The British Science Guild has prepared and issued a memorandum on the relations which ought, in future, to exist between the State and Science. They make the following recommendations:—

A national statutory Board of Science and Industry, the permanent staff of which should consist mainly of persons of wide scientific knowledge and business experience, should be established, which would naturally administer the scheme of the Privy Council Committee, as well as take over certain functions of existing Departments and Boards. The functions of the Board would be much the same as regards the promotion of scientific and industrial research and training, the co-operation of Universities with industries through trade associations, and the maintenance of a record of scientific and technical experts, as outlined in the Report on "British Trade after the War," by a Sub-committee of the Board of Trade.

In all Departments of State in which scientific work is carried on, adequate provision should be made for the periodical publication and wide distribution of bulletins, leaflets, and reports, so that increased public interest and attention may be encouraged in the results.

Every industrial undertaking subsidized or otherwise assisted by the State should have upon its Board of Directors men who possess expert scientific knowledge of the business in which they are engaged.

In order to develope industries which especially require the services of scientific workers, adequate remuneration and improved prospects should be offered by the Government, by municipal corporations, and by manufacturers, to men who have received an effective scientific training. Means should be found of compensating and rewarding persons whose researches have proved of decided national or public advantage without being profitable to themselves.

A knowledge of science should be regarded as an essential qualification for future appointments in the departments of the Public Service concerned with industrial, scientific, and technical developments.

Measures should be taken to revise the educational courses now followed in the Public Schools and the Universities of Oxford and Cambridge.

In elementary and secondary schools supervised by the Board of Education, more attention should be given to scientific method, observation, and experiment, and to educational handwork.

Prohibition Against Cocaine and Opium.

A Royal Proclamation was issued on July 28, prohibiting the importation of cocaine and opium into the United Kingdom.

The Proclamation sets forth that:—

> As from and after this date, subject as hereinafter provided, all cocaine and all opium shall be prohibited to be imported into the United Kingdom. Provided always, and it is hereby declared, that nothing in this Proclamation shall apply to cocaine or opium imported under the license of one of our principal Secretaries of State and in accordance with the provisions of such license. The word "cocaine" includes all preparations, salts, derivatives, or admixtures prepared therefrom or therewith, and containing 0.1% (one part in a thousand) or more of the drug. The word "opium" means raw opium, powdered or granulated opium, or opium prepared for smoking, and includes any solid or semi-solid mixture containing opium.

It will therefore now be illegal to deal in cocaine or opium except under conditions allowed by statute.

As regards cocaine, persons other than duly qualified doctors, registered dentists, registered veterinary surgeons, chemists, and druggists, or persons holding a general or special permit from the Home Office, will not be allowed to

obtain cocaine unless it has been prescribed for them by a duly qualified doctor on a prescription in a special form. As regards opium, the provisions, which are aimed at the extensive smuggling of opium from the United Kingdom to the East and to America now being carried on in contravention of the proclamation prohibiting the export of opium, and causes serious inconvenience and delay to our shipping, are somewhat different. Bona fide medical preparations containing opium will not be interfered with, but all dealings in opium itself are prohibited, except in the case of persons authorized by the regulations or holding a general or special permit from the Home Office. The preparation of opium for smoking is also made an offence. The importation of cocaine or opium, except under license from the Home Office, has simultaneously been prohibited by proclamation under the Customs Consolidation Act, 1876. Applications for licenses to import, or permits to obtain cocaine or opium, must be made to the Home Office.

Correspondence.

COLOUR AND ITS RELATION TO TUNE.

Sir,—Dr. Taylor's article is perhaps the first recognition in medical literature that colour-blind people are relatively unemotional. Coming from a medical officer who has to test colour vision, it is an interesting observation. The clear recognition that emotion has its language in music dates from the time of the Rev. Mr. Haweis, in the early part of last century, but there is no doubt that music owes its existence to its use in this way. Haweis recognized also that colour is an emotional vehicle, and predicted that at some future time, when the means were perfected, we would have colour symphonies as we have sound symphonies. I believe experiments are being made now to this end, using electric light. Attempts have been made to correlate the octave with the light spectrum, giving definite connexions between each note and colour. The classifications have differered, and perhaps such efforts are foredoomed to failure, as several octaves come within the range of hearing, but only one "octave" of sight is visible.

Yours, etc.,

Kew, 23.10.6. J. SILVERMAN.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page xix.

National Association for the Prevention and Cure of Consumption, Honorary Pathologist, Honorary Assistant Physician.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	Brunswick Medical Institute. Bendigo Medical Institute. Prahran United F.S. Dispensary. Australian Prudential Association Proprietary, Limited. National Provident Association. Life Insurance Company of Australia, Limited. Mutual National Provident Club.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	The F.S. Medical Assoc., Incorp., Adelaide.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Brisbane United F.S. Institute.
WESTERN AUSTRALIA. (Hon. Sec., 230 St. George's Terrace, Perth.)	Swan District Medical Officer. All Contract Practice Appointments in Western Australia.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Department of Public Instruction—Appointments as Salaried Medical Officers, with duties which include the treatment of school children. Australian Natives' Association. Balmain United F.S. Dispensary. Canterbury United F.S. Dispensary. Leichhardt and Petersham Dispensary. M.U. Oddfellows' Med. Inst., Elizabeth Street, Sydney. Marrickville United F.S. Dispensary. N.S.W. Ambulance Association and Transport Brigade. North Sydney United F.S. People's Prudential Benefit Society. Phœnix Mutual Provident Society. F.S. Lodges at Casino. F.S. Lodges at Lithgow. F.S. Lodges at Orange. F.S. Lodges at Parramatta, Penrith, Auburn, and Lidcombe. Newcastle Collieries — Killingworth, Seaham Nos. 1 and 2, West Wallsend.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	F.S. Lodges, Wellington, N.Z.

Diary for the Month.

Nov. 9.—Vic. Branch, B.M.A., Council.
Nov. 10.—N.S.W. Branch, B.M.A., Clinical.
Nov. 10.—S. Aust. Branch, B.M.A., Council.
Nov. 14.—N.S.W. Branch, B.M.A., Ethics Committee.
Nov. 15.—North Eastern Med. Assoc. (N.S.W.).
Nov. 15.—W. Aust. Branch, B.M.A., General.
Nov. 17.—Q. Branch, B.M.A., Council.
Nov. 21.—N.S.W. Branch, B.M.A., Executive and Finance Committee.
Nov. 24.—N.S.W. Branch, B.M.A., Branch (Ordinary).
Nov. 28.—N.S.W. Branch, B.M.A., Medical Politics Committee—Organization and Science Committee.
Nov. 29.—Vic. Branch, B.M.A., Council.
Nov. 30.—S. Aust. Branch, B.M.A., Branch.

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this Journal cannot under any circumstances be returned.

Original articles forwarded for publication are understood to be offered to *The Medical Journal of Australia* alone, unless the contrary be stated.

All communications should be addressed to "The Editor," *The Medical Journal of Australia*, B.M.A. Building, 30-34 Elizabeth Street, Sydney, New South Wales.